

THE IMPACT OF ECONOMIC GLOBALIZATION ON THE U.S. LABOR
MARKET

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ABSTRACT

While the overall impact of globalization has been impressive - lifting millions of people out of poverty and providing unprecedented opportunities for people around the world, the benefits have not been shared equally by all. With the rise of emerging economies, the world's balance of power is shifting, causing the U.S. and other developed countries to revisit their policies. Although the U.S. and other Western nations continue to be the wealthiest nations per capita, the emerging economies will soon overtake them as the largest economies overall. In order for the U.S. to continue to enjoy its high standard of living, it will have to remain competitive worldwide and ensure it can fully benefit from its comparative advantage.

This thesis focuses on the impact of three specific aspects of economic globalization: trade, foreign direct investment and technological progress on the U.S. labor market. The thesis is structured in a way that provides a comprehensive overview of each of the elements of globalization, its history, economic theory background and analysis of its impact on jobs. Through thorough examination of trade, investment and technological progress, the thesis concludes that while economic globalization can result in some job losses in the U.S., all of the elements also create new jobs. Additionally, these jobs are often better paid jobs than the ones that were eliminated or outsourced abroad.

Since job loss and job creation are natural occurrences of the changing dynamics of every economy, one of the problems of long term unemployment lies in the disconnect between a worker's existing skill set and the skills required by the new employer. For the U.S. to attract foreign companies willing to pay premium wages, American workers need appropriate education in order to be able to perform these jobs. Domestic policies, especially in the area of infrastructure investments and tax reform, can provide a further boost to attracting foreign companies and incentivizing domestic companies to expand their operations in the U.S. Lastly, the U.S. needs to benefit from the areas where it has comparative advantage, and therefore, continue to open foreign markets to its products and services and ensure the enforcement of intellectual property rights in foreign markets.

DEDICATION

I would like to dedicate this thesis to my amazing husband, Bruce. Without your tireless support and encouragement, I would have never completed it. Thank you very much for reviewing my thesis, page by page, making sure it made any sense. I would also like to thank my mom, who kept me on track when I started procrastinating a little too much and always putting things in a positive light. I would also like to thank my stepfather Pali and my sisters for their support and their help in general, while I focused on my studies. And last but not least, I would like to thank Professor Uchimura, my thesis advisor and mentor during this journey. Thank you for your faith in my ideas and for your encouragement to dive in more deeply into areas outside of my comfort zone. I am convinced that my work would not be what it is without your guidance and thoughtful insight.

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CHAPTER 1

INTRODUCTION INTO GLOBALIZATION

Globalization is perhaps one of the most controversial words in academia as well as in the media, as economists attempt to quantify its impact, and people around the globe decide whether it has a positive or negative impact on their own lives. Globalization has been defined differently by various publications, but it may be generally viewed as an increased economic interdependence of national economies across the world through a rapid increase in cross-border movement of goods, services, technology and capital. This increased economic activity among nations has led to numerous benefits around the world, but it has also caused disruptions in the world structure, including the U.S. labor market.

It is undisputed that the overall impact of globalization has been to lift millions of people out of poverty and provided unprecedented employment opportunities for people from some of the poorest regions of the world. However, not all of the jobs are equal. While no one would oppose alleviating poverty in the developing world, such action would hardly be supported by the majority of the public in the developed world if it resulted in the deterioration of their personal economic situation. Although most economists believe that globalization has strong potential to contribute to the global economic growth and employment across the world, many citizens, particularly in the developed countries, hold negative views on globalization. This sentiment is particularly clear when the impact of globalization focuses on employment and income. Since globalization is a complicated subject covering different elements, a clarification of specific impacts on different types of economies and nations may

provide a useful guide to be able to point to benefits or costs of globalization to the U.S. economy.

General Overview of Globalization

Globalization can have different meanings for different people, so quantifying its benefits is often difficult. According to the Organisation for Economic Co-Operation and Development, the number of people living in emerging economies or in countries with high per capita income has increased from one billion to four billion over the last thirty years (Organisation for Economic Co-Operation and Development 2009, 1). Such a rapid increase in income has been particularly attributed to the global integration of large emerging economies, such as Brazil, China and India. China is an excellent example of a country which experienced an unprecedented economic growth over the last couple of decades. Approximately 30 years ago, the percentage of China's population which lived above the poverty line was at 16 percent. By 2005, the number reversed with only 16 percent of the population living below the poverty line.

Globally, the number of people who were under the poverty line in 2005 was 1.37 billion, which is certainly not a small number, but it is 500 million people less than two decades ago. In 2011, that number has decreased with an estimated 820 million living in poverty. The global poverty rate of 25 percent in 2005 has been reduced by one to two percentage points a year, lifting approximately 70 million people out of poverty on an annual basis. While contributions of globalization to developing countries have been documented extensively, the question still remains whether the benefits have been shared equally by the developed countries and its citizens.

Although it may not be obvious, the United States has benefited from globalization as well, with estimates suggesting benefits of \$1 trillion increase of U.S. GDP on an annual basis due to globalization alone (Bradford, Grieco and Hufbauer 2005, 68). Some reports suggest as much as \$1.4 trillion a year, which would translate into an average of \$10,000 a year for a family of four (Aldonas 2009, 78). These opportunities are often overlooked, especially during the times of economic recession, when people tend to focus on shortcomings resulting from integrated global economy.

Although such benefits of globalization are plausible, they may not often be shared equally by all members of society. Some studies suggest that globalization has played an integral role in increasing inequality within countries. A recent study by the IMF analyzed the impact of three aspects of globalization, trade, financial liberalization and technological progress on income inequality, which appears to have increased in most countries and regions over the past two decades. According to their study, increased trade liberalization and exports are associated with a decrease in income inequality. Decrease in inequality can be attributed to benefits of agricultural exports for developing countries and to cheaper imports available to developed countries. On the other hand, financial liberalization, and foreign direct investment in particular, are associated with higher income inequality. Inward Foreign Direct Investment (FDI) increases inequality in both developing and developed countries while outward FDI has additional negative impact on developed countries. This is due to the fact that FDI requires a high skilled and educated workforce, raising the income of those who are better educated.

For outward FDI, its outflow can negatively impact U.S. workers with lower skills whose jobs may have been moved to cheaper locations. Technological progress alone is responsible for the biggest chunk of income inequality because it increases the premium paid for skills and substitutes for low skilled labor. Therefore, while globalization has contributed to increase of incomes across all segments of the population across many countries, those with higher skills have benefitted disproportionately more than others. Particularly, foreign direct investment and technology tend to increase the returns on education and training (Jaumotte, Lall and Papageorgiu 2008, 14).

Different Factors Playing a Role in Globalized World

Although globalization is often mentioned in the media and publications, it is rarely explained in detail. What is globalization, and can it be reversed or could it have been avoided at all? Would the U.S. be better off without integrated global economy or does globalization benefit the U.S. economy and ultimately its citizens? What are the forces and factors driving globalization and can they be separated?

One of the factors which played and continues to play a major role in the globalization debate is opening of national borders for trade and labor flows and dismantling of political barriers. This dates back to the late 1980s, which marked the end of the cold war and the establishment of democratic governments in eastern and central Europe. Many of these economies were eventually integrated in the European Union, marking a further opening within the EU's internal market structure, allowing for free movement of goods, capital and people. Political liberalization encouraged increased efficiency of production on a global scale and also allowed increased

diffusion of technology throughout their economies. Additionally, the opening of borders and creation of institutional infrastructure allowed greater foreign competition, further improving internal competition resulting in increased productivity. Increased productivity translates into lower prices and higher quality of goods and services for consumers.

Related to political opening and institution building is international trade. If there is little political willingness to open its economy to foreign competition and lack of rule of law protecting foreign companies' investments, it will be difficult to fully benefit from opening its economy to foreign companies. Trade liberalization and open investment policies are other elements resulting in interconnectivity among nations enabling them to not only sell their products and services globally without facing higher tariffs, but also enabling companies to establish facilities in different countries and thereby benefit from lower prices of inputs of production (labor, capital, land, machinery and raw materials). Access to certain labor markets can provide a twofold advantage. On the side of labor input, adding more than two billion workers to the global labor market provides foreign companies with access to a much cheaper labor force. On the other hand, compensation of these workers created by new opportunities makes them global consumers, providing companies with new customers.

Another very important factor which has changed the world and enabled globalization to take off was the invention of the internet and related technologies, which facilitated trade in ways never before possible. Provision of services, which were always seen as non-tradable, became possible in many other countries around the globe. The impact of enormous increases in efficiencies along with falling costs in

the communications and telecommunications industry made not only certain services possible, but enabled further integration of supply chain by allowing companies to find each other through the internet and market their product much more easily in dozens of markets around the world.

In the area of technological progress, the transportation sector has made huge strides, making it easier for people to travel to meet their business partners or for workers to look for work opportunities in foreign labor markets. Such changes have had an enormous impact on different countries, depending on their immigration policies and opportunities available to their citizens in their internal markets. On the negative side, some countries experience a so called brain drain, as their most educated workers explore work opportunities in developed economies that are willing to pay premium wages for their talent. Large scale immigration waves from certain countries in Asia and Africa to Western Europe and North America are also redefining the structure of the recipient countries' population structure and affecting its consumer preferences and social make-up.

Lastly, there are many other non-economic factors associated with globalization, which are found in many different spheres. From the political perspective, globalization has reduced the importance of nation states and contributed to the emergence and increased power of supra-national institutions such as the European Union, the WTO, G-20 and others. Cultural impact of globalization can be seen through the emergence of English as the language of global business. English is seen everywhere, particularly as it is the dominant language on the internet. Many people now study languages which would have been of little use to them just several

decades ago. Many people who were never before exposed to foreign cultures can now enjoy cuisine specific to very different parts of the world.

U.S. Decline and Rise of Other Nations

Since globalization has been attributed to contribute between \$1 trillion and \$1.4 trillion to U.S. GDP a year, it is hard to argue against its overall benefits to the economy. However, by comparison, many believe that developing countries have benefited much more and their rapid rise has resulted in a diminished importance of the West. The rise of emerging economies is seen as a challenge as well as an opportunity. In particular, the focus has been on the BRIC countries: Brazil, Russia, India and China. Sometimes, the economists refer to a slightly larger group of BRIICS which includes Indonesia and South Africa.

China and India have made great strides over the past couple of decades and even the past few years. In only five years between 2005 and 2010, India successfully lifted more than 230 million people out of poverty, and that number is projected to increase by another 137 million by 2015. China is not far behind, with 153 million people escaping poverty between 2005 and 2010, with predictions that the number of the poor would further fall by 50 million by 2015. Brazil and South African numbers for 2005-2010 are smaller but still quite impressive at 7.2 million and 1.5 million respectively (Chandy and Gertz 2011a, 5).

While the U.S. economy has also benefited from globalization, it has experienced one of the biggest economic crises in decades and it continues to face internal pressures stemming from increased inequality and the inability to address its public debt. On the other hand, countries such as China and India have escaped the

global crisis somewhat more easily in comparison to developed countries, who have continued to pull each other down through their connected financial markets.

The world's balance of power is shifting towards the emerging economies with China on the forefront. Although the United States and other Western nations will retain their ranking as the wealthiest nations per capita, the emerging economies will soon overtake them as the largest economies overall. According to projections, Western economies will continue to grow slowly, while Brazil, Russia, India, China and Indonesia will grow at an average rate of six percent a year between 2009 and 2050 and their share of G20 GDP will rise from 19.6 percent in 2009 to 50.6 percent in 2050. On the other hand, G7 countries, Canada, France, Germany, Italy, Japan, UK, and the U.S. will grow on average at less than 2.1 percent a year and their share of G20 GDP will fall rapidly from 72.3 percent to 40.5 percent (Dadush and Stancil 2010, 8).

Focusing specifically on the United States and China, there are many diverging studies predicting the date by which China will overtake the United States as the world's largest economy. The dates range considerably, with the latest IMF study suggesting that it may come as early as 2016. The predictions are based on estimates using the GDP adjusted for purchasing power parity, a method used to adjust for statistical bias which may be resulting from using the exchange rate for comparing the GDP of different countries. Using these calculations, the Chinese GDP is currently at about \$11.2 trillion in 2011, accounting for 14 percent of the world's GDP and is projected to \$19 trillion in 2016, making up 18 percent of the world's GDP. By comparison, the U.S. economy's GDP stands at \$15 trillion in 2011,

accounting for 20 percent of the world's GDP and is expected to grow to only \$18.5 trillion by 2016. This is a very interesting development, especially given that only ten years ago, the U.S. economy was three times the size of China's economy (Newman 2011, 1).

These are only predictions, but as emerging economies become the world's largest economic superpowers, these changes often translate into different political dynamics. It will be interesting to see if China will continue on its trajectory of uninterrupted economic growth or whether some of its internal challenges will derail the plans. Similarly, the U.S. economic predictions pale in comparison to growth predictions of the large emerging economies. After the financial and economic crisis, the U.S. economy is slowly picking up its usual growth pace. However, the U.S. faces its own internal challenges, starting from unsustainable government debt to its education systems, which seems to be losing in international rankings year by year.

Conclusion

The economic rise of emerging economies and relative decline of Western nations will surely bring about new challenges, including geopolitical tensions, as the power continues to shift towards Asia. Developed economies already expect large emerging economies to make their contributions to international institutions and to participate in resolving global issues such as climate change and aid to the least developed countries. We have, in the meantime, witnessed the growth of G7 to G20, and increased expectations on the part of emerging economies to have greater say in international organizations such as the World Bank, the World Trade Organization and the United Nations.

In addition to the challenge of leadership to address global issues, there are issues related to prospects of developed nations stemming from the rise of emerging economies. Undoubtedly, we will see increased competition among nations for energy supply and raw materials. But specifically, what does global interconnectedness mean with regards to the jobs in the U.S. and other Western nations? As the emerging economies' income climbs up to half of that of the developed countries, there will surely be an impact on job competition.

CHAPTER 2

IMPACT OF INTERNATIONAL TRADE ON U.S. EMPLOYMENT

International trade is one of the major forces behind globalization as it contributes to growing interdependence of countries through increased division of labor and countries' access to each other's producers and consumers. Trade is also most often blamed for lost jobs and declining incomes, particularly in developed countries, where the citizens feel that their jobs are being outsourced to locations with cheaper labor costs. While outsourcing is often a result of lowered barriers to international trade and driven in particular by manufacturers' need to access cheaper labor to control costs and keep their products competitive in export markets, it is viewed as more responsible for job loss than merchandise trade itself. According to a German Marshall Fund study, 61 percent of Americans and 59 percent of Europeans saw outsourcing as a leading cause of job loss; however only 12 percent and 10 percent, respectively, believed that trade was responsible for job loss (German Marshall Fund 2007, 22).

Although many consumers benefit from lower prices of their goods due to increased domestic competition, those who have lost their jobs and are unable to find equivalent jobs at comparable salaries are bound to hold more sober views on the benefits of trade. There are many who believe in free trade but do not trust other trading partners to follow the rules as agreed in international agreements.

Introduction to Comparative Advantage and Competitiveness

Trading among people and civilizations can be traced back thousands of years. International trade developed much more rapidly after the Industrial Revolution, during which transportation costs decreased considerably. Since global trade carries a number of benefits which increase the well being of nations, the economic theories explaining the benefits of trade started to develop early in history. One publication that many economists still go back to is Adam Smith's book *An Inquiry into the Nature and Causes of the Wealth of the Nations*. Published in 1776, Smith describes how specialization and division of labor improve economic well-being. The book also explains that technological innovation increases productivity. Smith also attacks mercantilism, a doctrine supporting the need of protectionist tariffs and large gold reserves. The author and the book is best known for the term "invisible hand" of the market, describing the self-regulating nature of the marketplace resulting from individuals trying to maximize their own gains, through which their ambitions benefit the whole society. In his book, Smith discusses benefits of "treaties of commerce", the arguments that underlie present day free trade agreements, and how such treaties ultimately benefit the nations involved. He notes that these treaties are also disadvantageous to the favoring country, in comparison to a scenario where all the nations are admitted to the treaty and free competition is put in place, which is an important observation relevant to current multilateral trading system.

Additionally, Smith laid foundations for another great economist, David Ricardo, who is credited for developing the basis for international trade theory of comparative advantage. In *Wealth of the Nations*, Smith describes that while grapes can be grown in Scotland and wine can be made from them, it would be much more

expensive to produce than to buy it from other countries. Smith asks “Would it be a reasonable law to prohibit the importation of all foreign wines, merely to encourage the making of claret and burgundy in Scotland?...As long as the one country has those advantages, and the other wants (lacks) them, it will always be more advantageous for the latter, rather to buy of the former than to make.”

While Smith talked about absolute advantage, Ricardo picked up on this idea and developed the concept even further in his book, *Principles of Political Economy and Taxation*, issued in 1817. The idea of comparative advantage is based on the premise that even if one country can produce everything more efficiently than another country, it is beneficial for it to focus on the product at which it is the best and use the profits to buy other things from elsewhere. The best example was provided by economist Paul Samuelson. The example involves the best lawyer in a city, who is also the best secretary. While the lawyer could be both a lawyer and also his own secretary, it is beneficial for him to focus on the occupation which provides him with the biggest output rather than pursuing both occupations which would decrease his productivity and output. Therefore, the best solution lies in having the lawyer focus on his work and employ a secretary. In this scenario the output for both will increase, providing the most efficient output for the overall economy as well.

The theory of comparative advantage is extremely important in international trade because it provides a basis under which all trading countries can gain from trade, as long as they have comparative advantage in a product or services desired by other nations. The premise lies with different relative costs for producing the same goods. Countries comparative advantages change over time depending on their ability to

produce goods or services more efficiently. That's where the countries' competitiveness comes into play.

The terms comparative advantage and competitiveness are sometimes used synonymously, but competitiveness is often viewed more broadly. Some studies of competitiveness consider domestic regulations and general business climate in the country to find out its potential for economic growth, which would provide employment for countries' citizens. Comparative advantage and competitiveness have to be considered together, as a country's comparative advantage stems from its competitive edge in certain area of production or service. A country is able to gain this competitive edge by being able to benefit from an environment conducive to business.

Policymakers across the world compete against each other to adopt policies that will increase their potential for economic growth. Countries have to ensure that they create a healthy business climate for companies, which would in turn create jobs in their economies. Many organizations, such as the World Economic Forum and the World Bank, have indexes analyzing countries' competitiveness.

For example, the World Economic Forum analyzes various pillars needed to create a comprehensive overview of a country's ability to compete globally and ensure a stable economic growth in its country. These pillars include factors such as a sound institutional environment determined by legal framework ensuring protection of property, transparency and efficiency. Extensive and efficient transportation and communications infrastructure serves as another indicator, along with quality of health and primary education. This factor ties closely into efficiency and flexibility of the labor market, which should be capable to have workers shift from one economic

activity to another without much social disruption. The technological readiness of a country to adopt existing technologies to increase productivity and a country's technological innovation are taken into account as well. So too is a well functioning financial market, a point especially relevant in the current economic climate after the financial sector has been blamed for triggering the global economic downturn. The importance of a sound and well functioning financial sector cannot be overstated, as it ensures that capital is available for private sector investments in the economy. There are a few others that are being taken into consideration in the WEF report, and considering all the elements, the United States comes out as number five in the 2011-2012 study, one down from last year. China comes in at the number 26, an increase by one from the previous year.

The competitiveness index is an important indicator to understand how countries' different policies affect their global standing and how the policymakers cannot only focus on one particular policy as a solution or fault for its rise or decline.

This thesis will not analyze all U.S. policies and its impact on U.S. economic growth and job market. Instead, it will focus on three particular areas, which are often in the prime spotlight for job losses in the U.S. These are international trade, foreign direct investment and technological progress or innovation.

History of International Trade

International trade liberalization is often viewed as something that has occurred in the last 20 or 30 years. However, we see such liberalization going back to the 19th century. For example, by 1860 Britain had removed all tariff and trade restrictions and established free trade with India and other British colonies. British policy of free trade had positive effects on its economy, but also on global economy

by allowing for technological progress to spread across the world. Britain also actively reinforced its goals through geo-political means to increase its exports; for example, its invasion of China in 1840 forced the Chinese to remove its ban on opium imports. This war, known as the First Opium War, was followed by the Second Opium War initiated by the British and eventually joined by the French in 1856. The result of the war allowed Britain, France, Russia and the U.S. to establish diplomatic legations in China, and open up several Chinese ports to foreign trade and legalization of opium trade.

Increased trade and the acceleration of technological progress, accompanied by rapid growth of capital, improvement in education of the workforce, led to much increased standards of living for many countries. Growth of prosperity came to a sudden halt with the beginning of the First World War, followed by the Second World War. Between 1913 and 1950, the global economy slowed down considerably in comparison to the previous period between 1870 and 1913. Following the wars, developed countries created a new international order based on international organizations established to promote cooperation. These institutions included the OECD, the World Bank, the International Monetary Fund (IMF) and the General Agreement on Tariffs and Trade (GATT), which eventually evolved into the World Trade Organization (WTO).

The period after the World Wars was marked by an unprecedented growth of countries' GDP and per capita income. The years between 1950 and 1973 led to convergence between the nations' economic prosperity, particularly narrowing the divide between the United States and Western Europe and Japan. The economic boom slowed down with the 1973 Arab-Israeli War and the 1979 Iranian revolution,

particularly in Europe and Japan. However, the 1980s onward marked the beginning of the rise of emerging economies

World Trade Organization and Free Trade Agreements

Although unilateral trade liberalization goes back hundreds of years, the establishment of rules based trade system is relatively new. Nevertheless, its importance cannot be overstated, as it provided binding rules and remedies for breaking the rules. It allowed countries to enjoy benefits of free trade without concerns of protectionist tariffs and barriers that could be otherwise put in place in foreign markets.

The beginning of the WTO goes back to the post-war era, during which a group of 15 countries began discussing an agreement aimed at reducing and binding tariffs. In the meantime, there were plans to establish the International Trade Organization (ITO) under the umbrella of the United Nations, but the initiative never moved ahead. Instead, the first round of negotiations of the group negotiating lowering tariffs came up with a package of rules and 45,000 tariff concessions affecting \$10 billion of trade, which accounted for approximately one fifth of the world's total trade. Quickly the group expanded to cover 23 countries and the deal was signed in October 1947 as a General Agreement on Tariffs and Trade (GATT). Since the idea of ITO was never ratified, countries had to rely on GATT as the only multilateral treaty governing international trade.

Since GATT's establishment, the basic legal principles have remained largely the same, but various additions were added through a series of negotiating rounds and by an addition of plurilateral agreements. The main goal of negotiating rounds was to further reduce tariffs (particularly of the manufactured goods) and to introduce new

disciplines into the agreement. The Kennedy Round, which started in the mid-1960s, created a section on development and reached an agreement on anti-dumping. The following Tokyo Round, which lasted from 1973 to 1979, already had 102 countries participating in the negotiations and resulted in an average cut of customs duties by one third in the world's nine major industrial markets, bringing the average industrial tariff to 4.7 percent. The Tokyo Round also delivered codes on technical barriers to trade, plurilateral agreements on government procurement and trade in civil aircraft.

In the late 1980s, the GATT members started to pay attention to changes brought on by globalization, and in 1986 launched the Uruguay Round, the largest negotiating mandate agreed to that date. The talks extended the agreement to cover services (an important and growing sector of the developed economies), intellectual property protection, and reforms of agriculture and textiles. The agreement was signed in April of 1994 and in addition to a number of disciplines covered, also changed the GATT to become the WTO as we know it today.

GATT still exists under the WTO as one of the main agreements under the WTO structure. The other important agreements include the General Agreement on Trade in Services and the Agreement on Trade Related Aspects of Intellectual Property Rights.

The latest round, which was launched in November of 2001 as the Doha Development Agenda, has held numerous Ministerial meetings since its announcement, but has so far been unable to find a compromise acceptable for all members in order to conclude the negotiations. Currently, the WTO has 153 members, with one of the largest emerging economies, Russia, joining in December 2011. The WTO is an important institution, not only because of the number of tariffs reductions

and protection of intellectual property and other established rules, but primarily due to two main guiding principles: Most Favored Nation principle and National Treatment.

The MFN principle states that countries cannot discriminate between their trading partners. Therefore, if a country grants a special favor, such as lowered tariff to one nation, it has to extend it to other WTO members as well. The WTO allows for several exceptions such as in the case of a Free Trade Agreements (FTA) among the WTO members. The National Treatment rule states that the imported and local products, services, and IPR should be treated equally after the foreign goods entered the market.

Although the WTO is a complex system of rules and obligations, it has brought enormous benefits to all of its members. The WTO calculates that the Uruguay Round alone contributed between \$109 to \$510 billion to the world income.

U.S. Free Trade Agreements and Other Agreements

In addition to the U.S. membership in the WTO, the United States has negotiated a number of free trade agreements that build on the agreements negotiated in the WTO. An FTA is an agreement between two or more countries to further deepen liberalization between the countries and agree on certain rules that guide behaviors affecting trade in goods and services. These bilateral agreements provide the negotiating parties with preferential treatment for each other's services and products. The free trade agreements usually cover the elimination of tariffs and reduction of non-tariff barriers. Other commitments include rights of foreign companies to bid on certain government procurement without facing domestic restrictions, rights for service suppliers to supply their services in each others' markets, protection of intellectual property rights and many others. Typical U.S. free

trade agreement includes chapters providing National Treatment and Market Access for goods, chapters on Agriculture, Rules of Origin, Customs, Sanitary and Phytosanitary Measures, Technical Barriers to Trade, Services, Investment, Telecommunications, Financial Services, Competition, Procurement, Intellectual Property, Labor and Environment and Dispute Settlement.

Currently, the U.S. has 12 free trade agreements in force with 17 countries: Australia, Bahrain, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Israel, Jordan, Morocco, Canada, Mexico, Oman, Peru and Singapore. In October 2011, the President signed free trade agreements with Colombia, Korea and Panama, but the agreements have not yet been implemented. Additionally, the U.S. is currently negotiating a Trans-Pacific Partnership Agreement (TPP) with Australia, Brunei Darussalam, Chile, Malaysia, New Zealand, Peru, Singapore and Vietnam. This agreement is meant to eventually cover other trading partners from the Asia Pacific region. Trade Agreements have been negotiated by countries around the world for decades as proof to be one of the best ways to open up foreign markets (after the multilateral route). In 2010, 41 percent of U.S. exports of goods went to the countries with which the U.S. signed free trade agreements. The exports to these countries also grow at a faster rate than export to those countries with which the U.S. does not have agreements, with 23 percent versus 20 percent, respectively (U.S. Department of Commerce website 2011).

In addition to the Free Trade Agreements, the U.S. has a number of Trade and Investment Framework Agreements (TIFAs), which provide frameworks for countries to discuss and resolve trade and investment issues and discuss capacity building. The U.S. has a series of Bilateral Investment Treaties (BITs) that help protect U.S. private

investment abroad and help develop market-oriented policies in BIT partner countries. The U.S. currently has 40 Bilateral Investment Treaties.

U.S. Comparative Advantage and U.S International Trade Overview

As explained earlier, the theory of international trade is based on the premise that if there are limited barriers to trade, countries will specialize in the production of goods and services in which they have a comparative advantage. Since the United States has high cost labor in comparison to other countries, it is unlikely that companies will hire workers in the United States to produce labor-intensive products. Given that China, India, Brazil and other emerging economies have relatively cheap labor, their countries will attract companies specializing in production of labor-intensive products. There are of course differences between these countries depending on other elements, such as availability of infrastructure and regulations allowing easy access to these markets.

For the United States, companies in this market will specialize in the production of goods and services that are labor and capital intensive due to the abundance of a highly educated population and technically sophisticated equipment available in the U.S. As a result of the global division of labor, the United States focuses on production of the products and services enabled by innovation. Once the production process can be standardized and to the extent that the product or service can be produced by other companies around the world, global competition will result in production being moved to the country with the lowest cost.

Therefore, the U.S. economy appears to be relying on highly innovative products before they reach the level of standardization that would allow production in other countries. U.S. companies use their intellectual capital and intangible assets to

gain comparative advantage in global markets. Intangible assets include intellectual property rights, general business methods, research and development and firm-specific practices and knowledge. Given that the U.S. has a comparative advantage in producing innovating products, many U.S. industries which require intellectual capital and intangible assets are the main U.S. export sectors. These include the pharmaceutical industry, semiconductors and aerospace products and parts.

Due to years of liberalization resulting in integrated supply chains, trade has become an important part of the U.S. economy. Production sharing among countries through supply chains is one of the engines behind globalization. A supply chain is a network of companies and activities responsible for producing and distributing a specific product and delivering it from the supplier to the customer. Due to increased trade flows of intermediate products, the concept of country of origin label has become more complicated as each country is responsible for some value added as the product moves up the supply chain. Many publications often list the iPod as an example of such a product, which gets assembled and shipped to the U.S. from China; however, most of the value added to the product comes primarily from the U.S. However, there are many other countries, such as Japan, China, Philippines, Thailand, Singapore, Taiwan and various others, that participate in the iPod value chain, responsible for approximately 27,500 outside of the U.S. and almost 14,000 in the U.S. alone. The supply chains do not only relate to manufacturing but also services, primarily due to the need to link global production chains and servicing of products. Additionally, services such as transportation, which are critical for international trade and supply chains, continue to gain importance and increasingly make up large part of the product's final price. Integrated global supply chains have been gaining the

attention of many economists who may be eventually looking at comparing trade in value added instead of gross flows of trade.

Both trade imports and exports have grown throughout the 20th century, and in 2008, trade represented more than 30 percent of the U.S GDP as opposed to 7.5 percent in 1947, at the time of GATT signing (Business Roundtable 2010, 1). In 2010, the U.S. had a trade deficit in goods valued at \$646 billion. U.S. exports increased by 20 percent from 2009 and reached \$1.29 trillion. At the same time, the U.S. imported \$1.94 trillion worth of goods, up 18 percent from the previous year (Congressional Research Service 2011b, 3). The top export commodities during this period were civilian aircrafts, engines, equipment and refined petroleum products. In general, the U.S. is the most competitive exporter in the areas of industrial machinery, chemicals, aircrafts and semiconductors. On the import side, the U.S. imports raw materials, such as crude oil, capital goods and industrial products used for production of goods in the U.S. and consumer goods (Business Roundtable 2010, 2).

In the services area, the U.S. imports were valued at \$403 billion and exports stood at \$549 billion, which resulted in the U.S. trade surplus in services of \$146 billion (Congressional Research Service 2011b, 3). The U.S. exported primarily financial services, tourism, shipping and insurance. Many of these are broadly viewed as business services, including information, financial, scientific and managerial services. On the services import side, the U.S. imports tend to include travel and transportation services (Business Roundtable 2010, 2).

The U.S. is currently a net exporter of high-skill services such as computer software and satellite telecommunications services. The U.S. has a comparative advantage in many services, such as business services that are tradable. Consequently

increased trade in these services will likely lead to higher exports, which will benefit U.S. companies and their workers. However, the tradable services sector still lags behind manufacturing when it comes to exporting. In manufacturing, the participation in exporting is 25 percent, while in business services it is only 5 percent. There are many reasons why this may be the case, whether it is due to the fact that some of these services are fairly new and were only able to establish in the U.S. market, or because they may face trade or cultural barriers in foreign markets (Jensen 2011, 3).

Impact on U.S. Labor

First, in order to better understand the impact of trade on U.S. labor, it is useful to have an overview of the U.S. sectoral composition of the U.S. employment market. Based on 2007 data, business services accounted for 25 percent. Personal services accounted for another 25 percent, retail jobs contributed 12 percent and state and local government employees represented 12 percent of all U.S. jobs. Surprisingly, manufacturing jobs represented only 10 percent of all jobs, wholesale took 5 percent and construction another 5 percent.

The increased percentage of trade as a component of GDP is not unrelated to the number of jobs in the U.S. economy. In 2010, trade supported more than 38 million U.S. jobs, resulting in approximately 20 percent of all U.S. jobs being linked to US exports and imports (Business Roundtable 2010, 5). Between 2004 and 2008, trade dependent jobs increased by 22.7 percent in comparison to a 6.8 percent increase in general employment (Business Roundtable 2010, 6).

On the export side alone, some estimates suggest that exports represented approximately 12 percent of the U.S. GDP and around 10.3 million jobs in 2008 (U.S. Department of Commerce). Under the Department of Commerce study, exported

goods supported 7.5 million jobs, representing 73 percent of the total 10.3 million export supported jobs. Out of 7.5 million goods supported jobs, 3.5 million occurred in manufacturing. On the services side, exported services supported 2.8 million jobs, or 27 percent of all export supported jobs. Thirty-two percent of these jobs were in professional and business services. Other export supported jobs were in transport and warehousing (11 percent), wholesale trade (10 percent), financial activity (6 percent), agriculture (4 percent) and information (3 percent), leisure, hospitality (3 percent), government (2 percent) and retail (1 percent).

In general, there are a number of studies that can quantify how many jobs are supported by trade (exports and imports) or related to exports of goods and services; finding data on jobs lost due to trade is more difficult. An obvious loss of manufacturing has been evident over the years, but some would argue that trade in the long run does not affect the number of jobs in the economy, but rather affects the composition of jobs in the economy. While trade may cause certain jobs to be outsourced to another country due to lower cost associated with the production of the good or a particular service, it may be responsible for the reallocation of economic activity to different industries.

For example, the Economic Policy Institute claims that the trade between the U.S. and China alone was responsible for the loss of 2.8 million American jobs between 2001 and 2010 (Scott 2011, 1). Approximately 1.9 million of those jobs, or 69.2 percent, were in manufacturing. Since most of the affected jobs were due to jobs being outsourced to a low wage country, most affected workers in the U.S. were those with less than a four year degree, which is about 100 million Americans representing 70 percent of the workforce. Industries affected within the manufacturing sector were

primarily computer and electronic parts, where 909,400 jobs were eliminated between 2001 and 2011 (Scott 2011, 2). Other affected sectors included apparel, textile, plastic and rubber products, automotive parts and miscellaneous manufacturing. On the services side, jobs lost due to trade were in the area of administrative, support and professional, scientific and technical services (Scott 2011, 12).

According to a study by the National Bureau of Economic Research, between 1982 and 2002, the U.S. lost approximately 6 million jobs, which was coupled with a sharp increase of income inequality (Bernstein 2009, 3). Offshore employment by U.S. multinational firms as a percentage of total employment by these firms increased from 28 percent in 1982 to 36 percent in 2002. Such an increase in employment outside of the U.S. was to benefit increasing employment in developing countries, where affiliate employment share as a share of total worldwide employment increased from 8 to 17 percent. This is in sharp contrast with employment patterns by these multinational firms in developed countries, where the shares stayed constant over the same period at 20 percent of the total world employment. This increase of employment outside of the U.S. was accompanied by a reduction in the U.S. workforce of these firms by 12 million people in 1982 to 2002.

Income inequality attributed to globalization and trade in particular has been another worrisome development. Real hourly wages for manufacturing workers with a high school degree or less fell, while workers with at least a college degree experienced wage gains. Those with an advanced degree realized the largest wage gains. Industries that were particularly hard hit included leather products and footwear. On the other hand, offshoring declined in highly capital-intensive industries such as chemicals, engines and turbines (Bernstein 2009, 12). These findings are

consistent with the U.S. comparative advantage. Although there are some jobs lost in labor-intensive industries where the U.S. cannot compete with low-wage countries, it is able to retain and increase its employment in high-skill manufacturing.

Conclusion

Although international trade has proved that it has strong potential to contribute to global growth and employment, policy makers need to make their individual decisions based on their countries' economies and their comparative advantage. Liberalization of trade enabled by a strong multilateral system complemented by regional and bilateral free trade agreements, integrated many isolated economies into the world trading system and lifted millions of people out of poverty. Trade has brought an enormous growth of wealth across the globe and benefited consumers in various parts of world. However, as companies search for lower cost of labor, many workers in developed countries lost their jobs. Since stepping away from free trade would put the brakes on U.S. economic growth and its standard of living, the U.S. needs to look at ways to address unemployment caused by trade through adopting policies to address this dislocation.

In order for the U.S. employment to reach its full potential, the policy makers should not attempt to stop international trade or to implement measure to bring back jobs that have been outsourced. Instead, they should focus on encouraging a shift of labor and capital from activities that have become uncompetitive to activities where the U.S. has become competitive. In trade theory, competitive sectors and companies hire the unemployed workers, which were let go by uncompetitive firms. However, in order to ensure that the U.S. remains competitive worldwide and retains its

comparative advantage, the policy-makers need to formulate appropriate public policies.

Given that the U.S. has comparative advantage in services and high-tech manufacturing, the U.S. should be interested in exploring foreign markets in order to reap the benefits of this advantage. In order to reach some of the foreign markets, the U.S. needs to liberalize services trade with large fast growing economies. Additionally, in both manufacturing and services, the U.S. needs to ensure that its products and services benefit from full protection of its intellectual property. As noted earlier, the U.S. advantage comes from innovative industries whose value is based on the intellectual property and intangible assets. The intellectual property protection is also important for the services sector.

Well functioning economies should be capable to constantly reshuffle its resources, including labor, from one area to another. In order for economies to have a fully functioning reallocation process, they have to get rid of distortions which may be preventing it. One of the areas which could further encourage firms to stay in the U.S. or to invest in expanding their operations is investment in well-developed and smoothly functioning transportation and communications infrastructure. Additionally, since the reallocation process of workers from one job to another may result in a substantial reduction of income.

In order to limit negative effects of trade, the U.S. should ensure that there is a strong social safety system, which would mitigate the cost of adjustment. Such an adjustment system should not specifically target workers who have lost their jobs due to trade alone, but rather focus on providing assistance to all workers, who often need to be retrained to find another position in another industry or sector. Given that trade

has benefited particularly those with higher education, the government should spend the necessary funding to increase skills of those who lost their jobs and also those who will be entering the workforce in the near future. International trade should not be limited in order to protect less competitive domestic industries; instead, the U.S. needs to find ways on how to reap the full benefits from the areas where the U.S. continues to have an advantage.

Since comparative advantage is never static, the U.S. has to ensure that it remains competitive in these areas by ensuring that there is an abundance of high-skill workers capable of delivering the services. The U.S. needs to continue to invest in its education sector to be able to provide such workers to the companies. If the companies are able to find cheaper and more qualified labor abroad, it is likely that they will look for foreign labor that can replace its domestic labor in order to increase its profit margins.

CHAPTER 3

IMPACT OF INWARD AND OUTWARD FDI ON U.S. EMPLOYMENT

International trade is often viewed as the main element of globalization, but international investment is an increasingly important force in forging closer economic ties among nations around the world. Investment is particularly important for the United States, as it is the world's largest recipient of foreign direct investment and also its largest investor abroad. Nevertheless, as with trade, large emerging economies continue to increase their importance as both, the recipients of FDI inflows and also as outward investors. As the U.S. and other developed economies still struggle to fully recover from the financial and economic crisis, domestic policies and those of foreign countries are often looked at in order to allow their economies to grow.

Over the years, the U.S. has been actively leading negotiations to remove foreign restrictions on investments, but also many states continue to look at policies and incentives to attract foreign direct investment in their states. Although inward FDI is generally seen as positive, there are growing concerns about some inward investment, especially as it relates to critical infrastructure and sensitive industries. Additionally, since many companies investing in the U.S. are large multinational companies, some fear that these companies are replacing smaller businesses unable to compete with such large enterprises, since they cannot benefit from economies of scale and other efficiencies accrued by multinational corporations.

Outward FDI gets even more attention, since it is often perceived as responsible for outsourcing domestic jobs to low-cost countries. While others argue

that outward FDI gives the U.S. firms better access to foreign market's customers, enabling them to benefit from their competitive advantage. By allowing U.S. companies to expand and benefit from access to lower cost input, the firms increase their competitiveness at home and abroad, ultimately allowing the firm to grow its employment in the U.S. as well. This chapter provides an overview of the current inward and outward FDI flows and overview of economic studies showing their impact on U.S. employment. Based on the findings, the chapter outlines several policies which could further help increase U.S. employment.

Background on Foreign Direct Investment

Foreign investment was already well developed in the nineteenth century, primarily through Britain's lending to finance development abroad or to finance purchases of financial assets. During the period between the First and the Second World War, foreign investment declined, but the share of the foreign direct investment increased to about 25 percent of the total. During this period, the U.S. surpassed Britain as the world's major creditor. After the Second World War, FDI picked up, primarily due to technological progress, rapidly lowering transportation and communication costs. Europe and Japan were also in need of finances in order to rebuild their countries after the war.

Around the 1960s, U.S. net FDI started to decline, as many countries started to resist U.S. ownership of their domestic industries. Additionally, many countries were slowly recovering and began investing in the U.S. economy as well. During the 1970s, the FDI slowed down as well, but Britain started to appear on the world scene as one of the major investors. During the following decade, the U.S. became a major

recipient of FDI, largely due to its low savings rate, making it difficult to finance U.S. debt, which had to be financed through domestic capital market. This led to increased demand for foreign capital, which started to flow to the U.S. from Europe and Japan. The 1980s experienced enormous growth of FDI flows, which have increased more than four times over the period between 1984 and 1990. The 1990s were also very good years for FDI, which can be attributed to an improved investment climate and increase of incentives used by countries to attract investment (Moosa 2002, 17). Additional deregulations and privatization contributed to FDI growth along with increased numbers of treaties to avoid double taxation. This trend certainly continued in the 21st century, except for a decline during the economic crisis. Global FDI inflows grew rapidly in the 21st century, with almost doubling between 2003 and 2005 alone, when the inflows stood at \$560 billion and \$916 billion, respectively (Wynne and Kersting 2008, 3)

In 2010, global FDI stood at \$1.24 trillion, which is still about 15 percent below the pre-crisis levels and 37 percent below the peak in 2007. As the global FDI flows continue to recover, the recovery remains uneven between developed and developing nations. While FDI flows to developed economies contracted further in 2010, FDI flows to developing and transition economies recovered strongly, representing more than 50 percent of total FDI inflows in 2010. As more international production moves to developing economies, multinational companies increase their investments in these countries to maintain their competitiveness in global marketplace. This continued shift to developing countries can be also seen through rankings of countries by largest FDI recipients, where in 2010 half of top twenty

countries are now developing and transition economies. There were only seven developing and transition economies on the list of top twenty in 2009. The top ten economies responsible for FDI flows were the U.S., China, Hong Kong, Belgium, Brazil, Germany, UK, Russia, Singapore, and France (United Nations Conference on Trade and Development 2011, 4).

Global FDI inward stock goes primarily to services, closely followed by investments in manufacturing, at 50.5 percent and 41.6 percent, respectively. In the area of services, finance is taking up 15 percent of the share, business activities 10.4 percent and trade represents approximately 10 percent. In the manufacturing sector, most investment goes into the chemical sector, followed by electronics and auto sector, with shares of 6.7 percent, 3.6 percent and 3 percent, respectively (Navaretti and Venables 2004, 11)

The economic history of multinational corporations and Foreign Direct Investment dates back to decades ago when economists were trying to explain why multinationals would engage in foreign direct investments. Some suggest that the main reason for Foreign Direct Investment and the existence of Multinational Enterprises (MNE) is imperfections in the goods and factors markets, which serve as barriers to free trade. This theory suggests that if there was an existence of pure free trade with perfect goods and factor markets, zero transportation costs, and so on, there would be no need for multinational companies. Since having such perfect markets is impossible, FDI and MNEs develop in response to market imperfections. The country specific advantage, comparative advantage, is replaced by a company specific advantage, which leads to foreign direct investment. This advantage is then

transported through the internal market of the MNE, which substitutes for free trade (Rugman 1980, 367).

This theory is based on a premise of internalization first recognized by economist Ronald Coase in 1937. He suggested that internal organization of a firm can be an efficient method of production in order to limit operational costs. Companies' attempts to limit the costs relating to transactions, contracting and coordination lead to vertical integration within the firm. Building up on the premise on internalization of these processes, economist Stephen Hymer wrote his PhD dissertation *The International Operations of National Firms: A Study of Direct Foreign Investment*, explaining the difference between foreign direct and portfolio investment. He stated that the reason behind multinationals' FDI is to keep control of their production abroad in order to suppress competition or to take full advantage of certain abilities they possess. As a result, international operations and direct investment will concentrate in a few industries across the world, rather than in all industries in a few countries (which would be the result if companies invested only on a basis of interest rates). Economist Kindleberger later followed up on this hypothesis and suggested that the reason for the existence of FDI were imperfections in goods markets, imperfections in factor markets, economies of scale and government imposed interruptions (Calvet 1981, 44).

In addition to the internalization theory, there are many other theories, such as production cycle theory developed by Raymond Vernon in 1966, which was used to explain certain U.S. foreign direct investments in Europe after the Second World War. The theory is based on an innovation cycle consisting of four stages: innovation,

growth, maturity and decline. During the first stage, U.S. companies created innovative products for local markets and eventually exported to foreign markets in Europe. After U.S. companies started to standardize the product, some European companies began imitating the product, which forced American firms to produce products locally. In some cases, the products produced locally were also exported to the country of the firm's origin, in this case the U.S. (Denisia 2010, 55)

Another interesting theory was developed by John Dunning in 1980 and is seen as a further development of the internalization theory. His theory of Eclectic Paradigm is also known as the OLI-model or OLI-Framework. The OLI comes from different parts of the theory, Ownership, Localization and Internalization (Denisia 2010, 56). Ownership advantage means that company owns specific product or production process which confers an advantage to the company, such as a patent or a trademark. Location advantage refers to a location of production abroad which enables the company to retain its competitive advantage.

Lastly, internalization advantage allows the company to benefit from keeping certain business activities in the company. There are many other theories attempt to explain reasons why companies use foreign direct investment, whether it is access to factors of production such as natural resources or cheap labor, tax policies attracting investment or access to host country's market or to circumvent host countries' tariffs and non-tariff barriers.

General Overview of Foreign Direct Investment

International investment can be generally divided into four categories: Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), commercial loans and official flows (The Levin Institute, 3). While all the elements of investment have an impact on the world's economy, the area that attracts the most attention, whether it is positive or negative, is that of FDI. Foreign Direct Investment refers to investment in which the investor obtains a lasting interest in an entity in a country other than its home country. The lasting interest suggests the existence of a long-term relationship between the investor and the entity and a significant influence of the investor on the management of the entity. In addition to the initial transaction between the entities, there are subsequent capital transactions between the investor and its entity or other entities affiliated with the investor (OECD 1999, 7).

Although international trade is often used in media as the main driver of globalization and the main culprit responsible for job loss, some argue that FDI has surpassed trade in its contribution to globalization, as sales of foreign affiliates have surpassed the world exports two decades ago (Raff, Ryan and Stähler 2005, 1). While reports often focus on greenfield investments, an opening of a subsidiary controlled by the multinational firm, there are also other modes of FDI. One of them is merging or acquiring (M&A) a local firm or entering into a joint venture with a local company.

FDI can be also viewed from the perspective of the investor versus the view of the host country. From the investor's point of view, FDI can be a horizontal FDI, where the investment expands production of the same or a similar product abroad, or vertical FDI, which occurs when the company expands their operations to fulfill a role

of a supplier or a distributor. Vertical FDI can be also undertaken to gain access to raw materials. In addition to vertical and horizontal FDI, there is also conglomerate FDI, which covers both horizontal and vertical FDI. Horizontal FDI is the most common and according to Moosa, in 1999, horizontal, vertical and conglomerate mergers and acquisitions represented 71.2 percent, 1.8 percent and 27 percent, respectively, of total worldwide M&As.

From the perspective of the host country, FDI can be divided into export-increasing FDI, import-substituting FDI and government initiated FDI. Export increasing FDI is such that it results in the host countries' increased exports of raw materials or intermediate goods, particularly into the country where the investment is coming from. Import-substituting FDI refers to an FDI which replaces products that were previously imported into the host country and which will be now produced in the host country. Lastly, government initiated FDI is such that is attracted to the host country through various host country government incentives. Another often used breakdown of FDI divides FDI into expansionary and defensive. Expansionary investment is initiated by a company in order to take advantage of market opportunities provided by the host country which will enable it to increase sales abroad. The defensive FDI aims to take advantage of cheaper costs of production factors, particularly cheap labor, therefore reducing company's cost of production (Moosa 2002, 5). Lastly, FDI can be divided into the inward and outward FDI, those coming into the country or those being invested from the home country into the host country.

Although it is clear what foreign direct investment is and how it can be differentiated depending on companies' interests and end goals in the host country, it is not always clear what the impact of FDI is. In addition to the impact that FDI may have on employment in the host and the home country, there are many different effects it can cause. Since FDI involves transfer of capital, technology and business skills from one country to another, there will clearly be some effect in those areas. In addition to economic effects, there are social and other effects as well. Since the effect on employment in the home countries will be covered in the subsequent chapter, it seems proper to provide a brief overview of other effects attributed to FDI.

On the economic side, the FDI is likely to increase productivity in the host country if FDI results in the host country exporting to large foreign markets and the conditions allow for installation of plants which enable full economies of scale. However, if FDI is only substituting for domestic imports and the host country's market is too small for installation of plants to achieve full efficiency, then the result may not be increased productivity (Moosa 2002, 86).

Additionally, FDI is often credited for its role in diffusion of technology into global markets. Technology transfer is often the main vehicle for technology diffusion. As companies who are owners of certain technological knowledge explore foreign markets, they can decide whether they want to sell their technology, license it or use it directly in production in foreign countries, unless FDI is specifically prohibited or not possible. Technology provided from the parent to the subsidiary can result in a spillover effect as knowledge leaks out in the host country market This

often happens through labor turnover, as workers change jobs and move to local firms, through supplier and customer networks and managerial practices.

The host country also benefits from FDI through increased competition coming from foreign corporations which encourages domestic companies to increase their efficiency and become globally competitive. This often happens through backward linkages as investors develop relationships with host country suppliers. The other side of the story is that this increased competition can also result in eliminating domestic industry if it is unable to compete against foreign investors.

In addition to economic effects, many anti-globalization activists point out environmental damage that is often caused by FDI, particularly as it enters developing countries, which have much lower environmental standards. Many developing countries, in need of increasing investment in their countries, are willing to compromise their environment just to attract foreign FDI. Given the trend, many international organizations conducted studies and issued voluntary guidelines on how multinational companies' behavior in developing countries. For example, OECD's guidelines encourage multinational companies to conduct an environmental impact assessment and provide this information to public. They also encourage companies to consult local communities and develop contingency plans for preventing and controlling environmental damage.

Foreign direct investment is often undertaken by multinational corporations, which can be defined as corporations that have facilities and other assets in at least one country other than its home country. They are in large part managed by a centralized headquarters office located in the home country, coordinating activities in

different countries, known as host countries. U.S. multinationals, while relatively small in number, have an increasingly large impact on the U.S. and global economy. The multinational companies, often referred to as transnational corporations, generated value added of \$16 trillion in 2010, which is more than a quarter of global GDP. Their foreign affiliates accounted for approximately 10 percent of global GDP and for one third of global exports. While the last few years saw an increase of multinationals from the emerging economies, the participation of multinationals from developed countries is still at 80 percent and accounts for approximately 70 percent of FDI outflows (United Nations Conference on Trade and Development 2011, 24-25). In the U.S., American multinational corporations account for more than 60 percent of all U.S. exports and approximately 40 percent of U.S. imports (Congressional Research Service 2008, 6). Foreign Multinationals currently employ one in five workers in the EU manufacturing and one in seven in U.S. manufacturing. They are also responsible for one of every four Euros of manufactured goods sold in Europe and one in five dollars of manufactured goods sold in the U.S. (Navaretti and Venables 2004, 1).

Over the last few years, international production by multinationals continues to expand, suggesting increased acceleration of internationalization of multinationals. The main factor driving this increased internationalization is the fact that economic crisis has resulted in firms rationalizing their structure and increasing efficiencies, which is often done by relocating certain activities to lower-cost locations. Additionally, the fact that emerging markets have weathered the crisis relatively well

and are seeing a rapid recovery encouraged many multinationals to focus on these markets to generate profits and growth.

Inward FDI in the U.S. and Its Impact on U.S. Employment

While most critics of FDI focus on outward FDI which can result in jobs being moved overseas, the U.S. is also the largest recipient of FDI, receiving \$194 billion of inward FDI in 2010 and more than \$1.7 trillion in FDI over the last decade (U.S. Department of Commerce 2011, 1). According to the UNCTAD World Investment Report, this number is even higher, as they report that the U.S. received \$228 billion dollars in inward FDI in 2010 (United Nations Conference on Trade and Development 2011, 4). Therefore, it is important to analyze the impact of these investments on the U.S. economy and its labor market. Most of the U.S. inward FDI is coming from a handful of countries. Specifically, 84 percent of FDI in 2010 came from eight countries. Switzerland was the lead investor in the U.S., responsible for over \$35 billion last year, which represents approximately 19 percent of all U.S. inward FDI. The United Kingdom and Japan followed with \$31 billion and \$21 billion, accounting for 16 percent and 11 percent of total inward FDI, respectively. Other major investors were France, Germany, Luxembourg, Netherlands and Canada. European FDI represented the largest bloc with 73 percent coming from the region. Certain countries saw a rapid increase in investment, such as Switzerland, whose investment increased by 312 percent over 2009, and Japan, whose investment quadrupled. Ireland, which is the ninth largest U.S. investor, increased its investment by more than 370 percent.

Emerging economies, Brazil, India and China also increased their investments, although FDI is still relatively small in comparison to the top three. In 2010, Brazil's FDI in the U.S. was around \$3.9 billion, India's \$1.3 billion and China's stood at \$271 million (Organization for International Investment 2011a, 4). In general, investment by developed countries accounts for majority of the total investments. Between 1987 and 2006, the U.S. received approximately \$2 trillion in FDI, with almost 89 percent being invested through M&A (Council on Foreign Relations 2011, 99). This can, of course, be the result of the economic crisis, which is still affecting many companies, or it could be due to productivity increases applied by these companies.

Inward FDI was mostly directed at the manufacturing sector, which received more than \$78 billion, an increase of 68 percent from \$48 billion, in 2009. Within the manufacturing sector, the chemical sector was responsible for almost 40 percent of the funds, followed by the food sector accounting for almost 20 percent. Another significant industry receiving the investment was wholesale trade, which attracted approximately \$39 billion, an increase of more than 200 percent since 2009. The finance and insurance industry received \$17 billion, a decline of 27 percent since 2009, and professional, scientific and technical services received a significant share as well (Organization for International Investment 2011a, 6).

Often, the investments by certain countries are dominated by investments from a few multinational firms, which account for the bulk of FDI. For example, in 2009, the UK and Netherlands were leading investors in the U.S. petroleum sector, reflecting investments of two multinational firms, Royal Dutch Shell and British Petroleum (BP). Japanese and British investments are significant in the wholesale

trade sector and retail trade is dominated by European investments. European and Canadian investors focused on the banking sector and financial sector and German investor dominated the information sector.

During the last ten years, the majority owned U.S. affiliates of foreign firms employed between 5-6 million U.S. workers and these workers received, on average, 30 percent higher pay than non-FDI supported workers (U.S. Department of Commerce 2011, 1). This number was 2.6 million in 1987 and more than doubled by 2002 to 5.6 million. Since then the number of workers employed by these firms remained relatively flat hovering somewhere between 5-6 million workers (Organization for International Investment 2011b, 1). In 2007, foreign firms employed 6 million U.S. workers, which is approximately 4 percent of the U.S. labor force. FDI was present in every state with supporting different levels of employment in each state. For example, foreign companies supported 661,000 jobs in California, 477,000 in New York State, 450,000 in Illinois and 279,000 in Pennsylvania. Florida and New Jersey benefited from FDI as well, where it supported 279,000 and 237,000 jobs respectively. As for composition of jobs supported by FDI, 37 percent was in manufacturing, which is twice the share that manufacturing jobs represented as a percentage of overall U.S. employment. Retail and wholesale trade supported 22 percent of total FDI employment, with Dutch firms being the lead employers in this sector. Thirteen percent of FDI supported employment was in the information, finance, real estate and technical services sector. The highest average compensation of employees was in the finance sector at \$229,000, and where Swiss, Canadian,

Japanese and British firms accounted for 75 percent of the employment (Congressional Research Service 2011, 5).

Looking specifically on Greenfield investments alone, these created 123,443 jobs in 2010. Greenfield investments were still down from the high of 2008 where the investments were at \$89 billion, which was followed by much weaker investments of \$70.6 billion in 2009 and 54.9 billion in 2010. Most jobs created by Greenfield investments were in the area of metals and those by automotive Original Equipment Manufacturers (OEM), where these sectors accounted for 6,618 and 6,063 jobs respectively. Other sectors that added jobs were automotive components, real estate, machinery, business services and software and information technology services (Organization for International Investment 2011c, 3).

As noted earlier, FDI often results in higher productivity in the host country. This is often due to the fact that multinational companies are able to benefit from economies of scale and access to different labor and consumer markets enabling them to be more efficient. This has been documented by studies showing that while in 2009, U.S. subsidiaries of foreign affiliates accounted for less than one percent of all U.S. businesses, their outcome represented more than 5 percent of U.S. GDP and accounted for 4.7 percent of U.S. employment and 20.8 percent of U.S. exports (Organization for International Investment 2011b, 1). Reports of positive spillover effects derived from increased productivity from FDI have been reported by other economists as well. Keller and Yeaple had calculated that intra-industry spillover effects due to FDI accounted for 14 percent growth in U.S. productivity between 1987 and 1997 (Keller and Yeaple 2003, 26). Clearly, in addition to the productivity

increases which benefited the U.S. economy, the effect on employment is quite remarkable. Six million jobs or four percent of the U.S. labor workforce is not a negligible number, especially if the pay is well above the U.S. average.

In addition to increased productivity of foreign affiliates in the U.S. and higher wages provided by them to their U.S. workers, some may wonder whether inward FDI may increase income inequality, which is often seen as one of the major consequences of globalization. This argument is made because many investments in developed countries often require high skilled labor for which companies are willing to spend premium wages. However, the competition from developing countries which have workers with lower skills means that many low skilled jobs are moved overseas. However, does inward FDI have an effect on income inequality by increasing the gap or closing the gap?

According to the Kiel Institute for the World Economy, which analyzed state level data for 48 U.S. states including the District of Columbia, investigating the relationship between income inequality and inward FDI, long run effects show a negative effect of inward FDI on income inequality. Their study found that an increase in FDI is associated with a decrease in inequality in 27 states. However, an increase in FDI was associated with an increase in inequality in 21 states. Additionally, there is a substantial difference between the increases and decreases of inequality among various states. For example, FDI played an important role in decreasing inequality in Pennsylvania, South Dakota, New York and Wisconsin while in some states such as Maine and Ohio, the impact was negligible and close to zero. A strong rise in inequality was seen in Connecticut, Arkansas, Massachusetts and

Nebraska, where in all cases the multinational companies played a weak role or their involvement was recent. Other factors which could have played a role in states where inequality increased included a possible poor supply of skilled workers, such as in the case of Arkansas and type of FDI attracted by specific regions (Chintrakarn, Herzer and Nunnenkamp 2010, 16).

A slight improvement of inequality in the U.S. suggests that the U.S. should not fear inward FDI, but welcome it. In addition to creating well-paid jobs and increases in productivity in the U.S., it also contributes to decreases of income inequality in most U.S. states. Therefore, the U.S. should focus on increasing its inward FDI flows in order to provide higher employment rates across the country.

Outward FDI and Its Impact on U.S. Employment

The U.S. is currently the largest foreign investor in the world, responsible for FDI outflow of \$329 billion in 2010, or one quarter of the total global outflow of approximately \$1.3 trillion (United Nations Conference on Trade and Development 2011, 4). The 2010 numbers are up from 2009, during which U.S. companies invested approximately \$283 billion overseas. The next two countries with the highest outflow of FDI are still well behind the U.S., with Germany's FDI outflow at \$105 billion and France's at \$84 billion. Hong Kong, China, Switzerland, Japan and Russia are on the top of the list as well. Although the U.S. continues to top the list of foreign investors, the share of developing countries has been on the rise over the last few years, and they are currently responsible for \$388 billion of the outward FDI in 2010, a 21 percent increase over the previous year (United Nations Conference on Trade and Development 2011, 6).

Outward FDI has been at the center of attention of many globalization critics who point out that U.S. corporations invest and create subsidiaries abroad in order to decrease labor cost, which negatively affects U.S. employment. In the public media, this is often referred to as offshoring. Specifically, offshoring refers to the relocation of a business process by a company from one country to another. Most anecdotal stories suggest that U.S. multinational investments result in the relocation of U.S. jobs to low-wage countries such as China and India. An argument often used by globalization proponents suggests that the multinationals' foreign operations are detrimental to the U.S. domestic employment of these operations. This is due savings realized by the company through cheaper labor cost, enabling the company to stay competitive in the world market. These debates on the role of outward FDI in the U.S. economy and labor market have been going on for decades.

In the 1960s, there were already efforts in the U.S. to prohibit outward direct investments through the Voluntary Program of Capital Restraints between 1965 and 1967, by attempts to pass the Burke-Hartke bill and through the compulsory Office of Foreign Direct Investment regulations. The voluntary and eventually mandatory direct investment control programs were established in February of 1965 and were directed to limit new outflows of capital from the U.S. The controls were voluntary until December 1967 and became mandatory on January 1, 1968. The program pressed companies to improve their balance of payments contributions by increasing exports and limiting outflow of new capital. In 1968, mandatory controls imposed quotas for each company's foreign investments based on 1965-66 average in three geographical areas. For certain countries in continental Europe, except Greece and Finland, and

South Africa, the restraints called for a complete moratorium on new capital transfers allowing reinvestment of earnings up to 35 percent of the company's total base-period direct investment. In 1969 and 1970, the rules were eventually relaxed.

The Burke-Hartke bill, which was introduced in Congress by Representative Burke and Senator Hartke in 1972, was called the Foreign Trade and Investment Act of 1972 and its objective was to regulate international flow of goods and capital. The legislation included import restrictions and restrictions on FDI and the establishment of a foreign trade and investment commission required to restrict imports and ultimately serve as a planning commission for main sectors of the U.S. economy. The bill ultimately did not pass, but influenced domestic trade and investment discussion for years.

The discussion on effects of outward FDI on a home country and its employment has been going on for decades as well. Already in 1981, Lipsey and Weiss examined exports by 14 U.S. manufacturing industries and industries by other developed countries and concluded that the level of production of U.S. affiliates abroad was positively related to U.S. exports in that industry to the host country - meaning that production of U.S. companies in these countries attracted exports from their home country into the host countries and discouraged imports of that host country from other countries in that sector. Their study concluded that each dollar of production of U.S. affiliates abroad translated to approximately \$0.16 to U.S. exports. This meant that the claims that U.S. companies' production abroad had negative effects on U.S. exports were false and if anything, the relationship was positive and such production abroad created additional exports (Lipsey 1994, 20).

In a follow up study, Lipsey also examined the relationship between the U.S. affiliate production abroad and U.S. employment. The study reviewed six major industries: food, chemicals, metals, machinery, electrical machinery and transportation equipment. Based on his calculations, he concluded that there is a positive impact of U.S. affiliate manufacturing production abroad on employment per dollar of production by parent company in its home country. Therefore, more U.S. affiliate production abroad led to more employment in the U.S. (Lipsey 1994, 27). Although their research did not provide an explanation on what kind of jobs were involved, it is possible that larger production abroad requires additional coordination from headquarters, which could lead to an increase of supervisory and Research & Development staff. In addition to the increased number of jobs created by additional production abroad, the outward FDI also has an effect on the composition of U.S. employment which may be shifting from production to managerial and technical expertise oriented.

While Lipsey found the relationship quite positive, there were numerous additional studies which found the picture more nuanced. Brainard and Riker conducted a study in 1997, which found evidence of both complementarity and substitution in this relationship depending on the level of development of home and host countries. They found that while the U.S. foreign affiliates abroad substituted only modestly for U.S. employment, there was a strong substitution effect among U.S. affiliates in low wage countries (Brainard and Riker 1997, 17).

Another study focused on the manufacturing industry conducted in 2008 showed strong evidence of complementarity, indicating that a 10 percent increase of

U.S. investment abroad resulted in a 2.6 percent investment in the U.S. Additionally, they showed that a 10 percent increase of compensation of foreign employees resulted in an increase of U.S. worker compensation by 3.7 percent. They state that the success of outward FDI is associated with domestic capital accumulation and an increase with employment compensation and investment in R&D at home (Desai, Foley and Hines 2008, 5).

There were additional studies of this topic by other economists, with one study by Wynne and Kersting dividing the group of countries where the outward investment goes by developed and developing. In the case of U.S. affiliates in developed countries, employment abroad is complementary to employment in the U.S. In the case of production in the developing countries, their study found neither evidence of complementary nor substitution effect on the U.S. workforce. Therefore, their finding supports the view that U.S. companies' involvement abroad overall generates more jobs in the U.S., not less (Wynne and Kersting 2008, 24).

Although most of the studies focused on manufacturing, U.S. outward FDI by services companies totaled \$1.4 trillion in 2008, representing 43 percent of all outward FDI. Similar to the cases in manufacturing, U.S. service companies invest abroad for a variety of reasons, not just cheaper labor cost. Many companies invest abroad because the type of service they provide requires them to be closer to their consumers, or they try to penetrate large markets with high potential. Some companies have to invest abroad due to restrictions on cross border trade or other barriers to entry. Despite the fact that the U.S. companies establish affiliates abroad, the majority of these firms' activity remains concentrated in the U.S. In 2008,

activities of U.S. parent companies represented almost 80 percent of total value added by U.S. services multinationals and their employment accounted for almost 75 percent (U.S. International Trade Commission 2011, 3).

A 2011 study conducted by the U.S. International Trade Commission showed a strong relationship between outward FDI by U.S. service companies and U.S. domestic employment as well. Their study concluded that there is a positive effect of activities by U.S. foreign services affiliates on a company's employment in the U.S. While the effect is small, it is still a positive relationship, in which an increase of foreign employment or sales of affiliates of a U.S. service company is associated with a 0.1 percent increase of a company's employment in the U.S. This positive relationship is due to intra-firm exports, which support day-to-day operation and production of the final service sold to customers abroad. As a result of the analysis, the study estimated that in 2008, there were 697,000 jobs supported by intra-company exports of services by multinational companies (U.S. International Trade Commission 2011, 14).

Looking at specific services industries, some sub-sectors create more U.S. jobs through their international expansion than others. In the area of retail services, global sales and employment in retail industry grew rapidly, while the U.S. employment grew at a slower pace. Similarly to the general trend of rise of BRIC countries, the share of their retail sales grew while share of G7 countries' share went down. The retail sector is still a major employer in the U.S. economy, where it employs 14.5 million workers, which is approximately 11 percent of overall U.S. employment. Since 2000, the share of retail fell slightly, from 11.6 percent to 11.1 percent in 2011.

At the same time, the U.S. affiliate employment abroad increased from 538,000 to 960,000 between 2000 and 2008 (U.S. International Trade Commission, 50). U.S. employment in this sector grew only modestly during the same period. To some extent, some of the slowdown could be attributed to the increased productivity caused by new technologies, such as self-check out scanners and more technologically advanced supply chain management systems. In regards to the direct effect of expansion of U.S. companies abroad, additional sales are likely to create a small number of additional jobs in the U.S. for the parent firms and also their suppliers.

In the banking industry, the affiliate offices created overseas tend to hire employees abroad who complement the U.S. employees. Currently, there are almost 15 million workers employed in the banking sector globally, with 10 percent of them in the U.S. While global employment in the sector rose 7 percent since 2006, employment in the U.S. declined by 6 percent. However, this decline seems to be related to the financial crisis, as employment in this sector was increasing prior to the crisis. The U.S. banks investments abroad are usually meant to expand banks' presence abroad to gain new customers and additional revenue. Through these subsidiaries, the U.S. parent translates these gains by increasing domestic employment. According to a U.S. International Trade Commission study, intra-company exports of banking services supported more than 45,000 U.S. jobs in 2008.

In the computer services area, the picture was not as clear. Given the adoption of information and communication technologies all over the world, many U.S. computer services companies have established large networks of subsidiaries in dozens of countries. Many of them increasingly focus on the Asia-Pacific region and

BRIC countries, which hold the largest potential. As for employment by the U.S. computer services industry, the employment growth has been rising steadily at a rate of 4.3 percent between 2002 and 2008, the growth slowed down in 2009 due to the economic downturn. The employment of U.S. affiliates abroad has grown more rapidly than their employment in the U.S. and in the period between 1999 and 2008, the trend is even more obvious, as their employment abroad rose at 4.2 percent on average, while U.S. employment declined from 394,000 to 386,000 (U.S. International Trade Commission 2011, 26). During the same period, employment of U.S. affiliates abroad surpassed that of U.S. parents at home. The largest growth occurred in Asia Pacific while employment of U.S. affiliates in Europe remained the same. While, there is an overall small decrease of jobs by U.S. computer service companies in the U.S., it is hard to pinpoint whether this was due to these companies' expansion and investment abroad, and what their employment would be without their entry into the third markets through outward FDI. Additionally, some of the loss may have also occurred due to other unrelated factors such as the economic downturn, which started in 2009 and perhaps even due to the internet bubble of 2000.

In the area of logistics, companies' investment abroad is often necessary in order to extend their international coverage and network to meet customer demands. Since U.S. international logistics firms such as UPS and FedEx are often global by nature, their investment's impact on U.S. employment is more difficult to measure. However, UPS estimates that every 22 UPS transported international packages creates an equivalent of one full-time position (U.S. International Trade Commission 2011, 58).

Through various studies of the manufacturing and services sectors, it can be assumed that U.S. outward FDI contributes to the health and expansion of parent companies abroad and at home, creating additional jobs in the U.S. By exploring foreign markets, gaining new customers and additional revenues, U.S. parent companies are able to increase their capital, which enables them to hire additional employees, increase their compensation or invest their funds in R&D. Public debate has been mainly focused on blaming U.S. companies for exporting jobs abroad, but evidence suggests the opposite. Given that the studies have generally agreed that the outward FDI by foreign firms increases U.S. employment, U.S. public policy needs to reflect this fact by encouraging its companies to explore and invest in foreign markets.

Conclusion

Since both, inward and outward Foreign Direct Investment are to various degrees contributing to employment in the United States, increasing the inflow and outflow of FDI could provide an additional boost to the U.S. labor market.

In the past, the U.S. did not need to be concerned about attracting foreign investment, but as the world changes and provides opportunities for investments in other attractive locations, the U.S. needs to make inward FDI its priority. Increased FDI can be achieved by attracting further investments from various sources, its long standing main investors or those who are increasing its share of global FDI outflows. Since the majority of investment comes from a relatively small number of countries: Switzerland, the United Kingdom, Japan, Germany and France; the U.S. should attempt to attract additional investments from them. Outside of the main contributors, shares of certain countries, including developing countries, have been on a steady rise

and the U.S. should cultivate these relationships to attract new investments. Here, the U.S. can focus on countries with which it runs trade surplus with, such as China.

In order to attract inward FDI, the U.S. should ensure that it has an educated workforce that will satisfy the demand of foreign investors. Developed infrastructure and welcoming environment for FDI are often main factors for companies looking to invest. One hindrance to foreign investment often cited by foreign corporation is the U.S. tax system, which has a relatively high statutory corporate tax rate and a complicated tax code. Although many companies are able to benefit from various tax loopholes and credits, having a simplified tax code with a lowered corporate tax rate may provide an additional incentive for investment. According to a 2011 survey of 1,900 German subsidiaries in the U.S., the companies believed that in order for the U.S. to improve its competitiveness, the U.S. had to address its federal and state fiscal concerns and reform and simplify its tax system. Strengthening of the educational system, particularly on the levels K-12 and secondary education was of equal importance, with 75 percent suggesting that training models similar to the German vocational training would benefit U.S. manufacturing. Currently, 69 percent of those firms were planning to add staff in 2012, but 59 percent of these companies were experiencing difficulties finding workers with the relevant set of skills. Another challenge seen by German investors in the U.S. was a need for more affordable university education and need to invest in the U.S. energy infrastructure. Other issues listed include a need to streamline government regulations, a need for investments in transportation infrastructure and investments in renewable energy sources.

Over the past few years, many companies have raised an issue of the U.S. environment for foreign investments. U.S. inward FDI is often conducted through mergers and acquisitions, which have to go the national security reviews done by the Committee on Foreign Investment in the U.S. (CFIUS). Due to the process, many mergers and acquisitions have become politicized which resulted in some bids being ultimately withdrawn by the foreign investors. Chinese investors have been particularly concerned about the process. Although it is understandable that the U.S. needs to ensure that any of the investments in the U.S. do not negatively affect its national security, increased transparency and improved understanding of the process by the foreign investors may improve the investors' perception of the U.S. attitude towards foreign investment.

Investment promotion to market the U.S. as an optimal investment location should be another priority undertaken by the U.S. government, especially on the federal level. According to the World Bank report on investment promotion, the U.S. was near the bottom of the list for best practices. As the countries continue to compete for global investment, companies increasingly use investment promotion intermediaries to meet investors' needs at the early stages of investment process. Global Investment Promotion Benchmarking Index developed by the World Bank measures effectiveness of countries' investment promotion intermediaries to meet investor's needs in their selection process. Many foreign executives work closely with the intermediaries during their selection process.

Bilateral Investment Treaties are another potent avenue for ensuring increased inward and outward investment by creating investment certainty provided by the rules

established in the treaty. The U.S. should engage in BIT negotiations with countries that could prove to be the source and market for inward and outward investment, respectively. Investment treaties are beneficial, especially in the times of economic downturn when some countries decide to revert to protectionism. According to the UNCTAD World Investment Report, one third of all new investment measures in 2010 were in the area of regulation and restrictions, which has been an upward trend since 2003. Many of the restrictions were in the industries related to natural resources and in financial services. The FDI policies often interact with industrial policies increasingly used by some nations. These policies are used to protect countries' infant industries or to promote national champions. The U.S. should use its existing bilateral dialogues to discourage such policies and help especially developing countries better understand how such policies can negatively impact their countries in the long run.

In addition to countries adopting restrictive policies to protect certain companies in their own countries, the past few years have seen an increase of activity of State-Owned Enterprises (SOEs) on the multilateral level. To date, there are approximately 650 State Owned multinational corporations, which account for 11 percent of global FDI flows. This is a particularly high number, especially because they constitute only 1 percent of all multinationals. In addition to their high investments, they are overly represented on the list of top 100 multinational corporations, where 19 are SOEs (United Nations Conference on Trade and Development 2011, XIII). This is not to say that the SOEs do not belong in the area of global FDI; however, countries need to make sure that the investment of private multinationals in foreign countries is not unfairly disadvantaged when they are

competing for the same projects. Whether this is the case in the home country of the SOE or in third markets, SOEs and private multinationals should compete on a level playing field.

While one third of policies in 2010 were restricting investment, two thirds of the measures were in the area of FDI liberalization. However, having a secure, binding, access for U.S. investors to third markets cannot be overstated. There are currently more than 6,000 international investment agreements negotiated globally. 178 of them were negotiated last year alone. The U.S. currently has 40 bilateral investment treaties, so there is certainly some room for additional agreements.

Whether the U.S. is looking at expanding its investment abroad or attracting new investments in order to create more jobs for American workers, it seems that creating fair and open investment policies abroad and at home, is the simple answer. There are many ways this can be achieved, but the first step is identifying it as a policy priority. When it comes to U.S. inward investment, the U.S. has made some progress on this front in the last few years. In 2007, the International Trade Administration, under the U.S. Department of Commerce, announced its new initiative Invest in America, designed to attract foreign direct investment. It outlined three main activities as its main objectives: outreach to the international investment community, serve as an ombudsman to receive concerns of international investment community and to support state and local governments in their efforts to attract FDI.

In mid June of 2011, Invest in America was incorporated into SelectUSA, which was established by President Obama's executive order to encourage, facilitate and accelerate investment in the U.S. SelectUSA provides information for both

foreign and domestic companies, that would help them navigate through various federal programs and services available to companies located in the U.S, such as grants, loans and tax incentives. The SelectUSA website also offers industry snapshots providing an overview of the main U.S. industries and foreign investments and the general landscape in that sector in the U.S. While this is a useful tool, a more comprehensive investment strategy which could incorporate SelectUSA as one of the promotion arms would be a step in the right direction.

Perhaps Secretary of State Clinton's Economic Statecraft could serve as an umbrella for such a broad investment initiative. Describing the policy of economic statecraft, the Secretary outlined that the economic tools should be used to strengthen U.S. diplomacy and its position abroad and vice versa - how the U.S. diplomacy and presence abroad is used to strengthen the U.S. economy. One of the elements included in this agenda was strengthening U.S. trade, investment and commercial diplomacy to deliver jobs for American workers. If this agenda is vigorously pursued, implemented and followed through, it has the potential to deliver benefits to the U.S. economy and its workers. However, it needs to remain as one of the top U.S. priorities independently of the Administration in place.

CHAPTER 4

IMPACT OF TECHNOLOGICAL PROGRESS ON U.S. EMPLOYMENT

Technological progress, especially that of the 20th and early 21st century, has had an enormous impact on people's lives across the globe. The invention of the computer and the internet have been the driving force of the New Economy, and resulted in a sweeping change of the way we live, work and interact with each other. Today, two billion people are using the internet, and this number is growing by 200 million each year. Our access to information is unprecedented and our ability to reach people across the globe has never been easier. In addition to various social benefits provided by new Information and Communication Technologies (ICT), it has also provided opportunities to many companies which are now able to reach millions of new customers across the world.

In addition to new customers and potential revenues from foreign sales, the internet and related communication equipment and software have made it easier for companies to find workers in foreign locations. The invention of the computer and the internet has changed a substantial number of U.S. jobs by making them more efficient and limiting the time workers had to spend on administrative tasks. Instead, many job tasks became simplified but required additional education in order to reap the benefits of these technologies. This chapter will provide an overview of recent technological advances and how they altered the U.S. labor market. Based on the findings, it will provide recommendations on government policies that would enable the U.S.

economy to take advantage of this technological progress by providing meaningful employment opportunities to American people.

Background on Technological Progress

Technological progress as we know it today is associated mostly with the emergence of ICT, but its roots date back to the First Industrial Revolution. This does not mean that the period prior to it did not have any impact on economic growth. Medieval Europe's society invented many important things, such as gunpowder, spectacles and mechanical clock and other countries contributed with other inventions, such as paper, wind power and navigational instruments. However, the impact of these inventions did not deliver the same output growth as the Industrial Revolution. The Revolution meant that for the first time in history, there was transformation of an agrarian society into an industrial society.

During this period, countries adopted technological innovations that substituted human skills with machines. Although this explanation may seem simple, it had a vast impact on people's lives. The Industrial Revolution refers to a number of innovations, particularly in the area of cotton industry in England. One of the main differences of this revolution separating it from other improvements prior to the Revolution was that it was self-sustainable. The revolution overcame the the Malthusian trap, whereby rising population would match or outgrow the economic output causing stagnation and lack of improvement of standard of living. The Industrial Revolution enabled the UK's population to grow by up to 1.5 percent a year, which was about 1 percent higher than before the revolution. This caused Britain's rapid increase in wealth and change of its employment structure towards

more industrial labor. However, the revolution's impact on a shift from labor to capital and machines was not the only benefit. The factory system enabled the technology and inventions to be applied on a large scale, employing a large number of workers at the same time. Major innovations of the First Industrial Revolution included mechanization in the textile industry, steam power fueled by coal, and development of iron-making techniques. Although the steam engine was already invented in 1775, it was primarily used for pumping water out of mines. It was not until the 1780s that the steam engine was used to power other types of machines, especially in factories.

Although the UK was the leader of the First Industrial Revolution, other countries, particularly in continental Europe, were not too far behind. France increased its output in manufacturing output and its economic growth was similar to that of Britain. Although the UK is the one most frequently associated with spurring the Industrial Revolution, the progress was often a result of an international effort. The UK benefitted the most due to the fact that the inventions came at the time period associated with peace, unlike France, which was dealing with the French revolution that that the effect of diverting talent away from innovative activities.

The continuation of technological transformation of economies led to the Second Industrial Revolution. The Second Revolution was built on the inventions of the First Revolution with improvements in application of pure science calculations and testing methods, as opposed to trial and error technique of the past. During the Second Industrial Revolution, Western European countries along with the U.S. and Japan benefitted and rapidly increased their growth. For the U.S. in particular, the benefits were reaped through the establishment of heavy industry factories, building

of railroads and coal mining. Globally, increased competition among countries and access to foreign markets further accelerated the progress. Inventions such as the internal combustion engine, electricity and use of new materials and substances enabled the rise of communication technologies, such as the telegraph and radio. Additionally, the Second Industrial Revolution marked the beginning of professionalizing of the industry, by adding administrative and managerial positions in corporate organizations. Many companies also added a research institute into their organizational structure, fully dedicated to innovation.

Towards the beginning of the 20th century, the U.S. emerged as the new industrial leader, overtaking the UK. The gap between the U.S. and Europe became even more pronounced during the Second World War. The post-war period was associated with the emergence of mass production. As a result, companies expanded their supplier and customer network from regional to national coverage. Additionally, long-distance communications, air travel, and truck transport enabled by interstate highways provided a fertile ground for business to thrive.

The third important cycle in the evolution of technological progress is the emergence of the New Economy, related to advances in the ICT sector. While the benefits of technological progress for the First and Second Industrial Revolutions were hard to quantify, the benefits of ICT were much easier to grasp. The New Economy often refers to an economy that has transitioned from a manufacturing based economy to a service-based economy and is associated with the use of new technologies. The term was first used by Time magazine in 1983, but has been quickly picked up by other newspapers. The changed landscape of the U.S. economy

is often referred to as Knowledge-based Economy or Innovation Economy, describing increased participation and importance of knowledge technologies and innovative industries in the U.S. economy. This mainly refers to the use of the internet and the ICT technologies, which have changed the ways companies in the U.S. and global economy do business. The New Economy is sometimes viewed as an economy where the benefits of ICT investments would deliver sustained economic growth.

Technological progress has provided substantial benefits to the U.S. population. Between 1950 and 2000, the U.S. per capita income increased 213 percent. This period provided American society with electricity, phone service, clean water and many other benefits raising the standard of living of millions of its citizens. The life span of Americans increased from 47.3 years in 1900 to 77.9 years in 2007 (U.S. Department of Commerce 2012, 1-1).

The benefits of technological change have been observed for decades and many economists have attempted to measure the benefits brought to the economy and the workers. Already in the 1950s, economists such as Moses Abramowitz and Robert Solow attempted to measure improvements in technology and account for their impact on economic growth. Since not all growth could be explained by production inputs such as labor and capital, the unexplained portion was attributed to technical change. Already in 1957, based on data spanning from 1909 until 1949, Solow concluded that the gross output per man hour doubled over the period, with 87.5 percent of the increase being attributed to technical change (Solow 1957, 320). In addition to many economists attempting to identify the impact of technology on economic growth, many have focused on its impact on wages. Some economists, such as Berman Bound

and Griliches have pointed to technological change as the main reason for the decline of unskilled wages in the U.S.

Invention of Computers, the Internet and New Technologies

In order to better understand the needs of the U.S. economy to create economic growth that would create jobs for American workers, it is necessary to emphasize how the economy has changed from the previous decades and centuries. In the previous section, the Knowledge Economy was described, highlighting the importance of the internet and ICT technologies to global economic growth. When did this change occur and how did we get to this place?

Two inventions in particular could be credited for this change -- the computer and the internet. The history of computers dates back to the Second World War, if we do not count calculators, which date back to the 16th and 17th centuries. The first true computer was developed during the Second World War when the American military needed a faster way to calculate shell missile trajectories. The military asked Dr. Mauchly to develop a machine to perform this function and he constructed the Electronic Numerical Integrator and Computer (ENIAC) in 1946. Following the success of ENIAC, Mauchly and his colleague Eckert decided to form their own company, and in 1951 they delivered the first general purpose computer UNIVAC. Soon after that, in 1953, IBM announced its own computer, the IBM 701 which was quickly followed by a more user friendly IBM 650. These were the first generation computers using vacuum tubes, but they were not optimal for frequent use due to the tubes constantly burning out. With the invention of the transistor, the second generation computers became faster and more reliable. A leading second generation

computer was IBM 1401. In 1963, the industry developed the first computer industry standard, the American Standard Code for Information Interchange (ASCII).

The third generation of computers benefitted from the development of integrated circuits, which were able to put a number of transistors and electronic circuits on one wafer. At the time, the wafer could fit 10 to 20 transistors on one chip. As the technology developed, the engineers were able to fit more and more transistors, increasing from 20 to 200, and in the early 1970s, up to 5,000 transistors.

The fourth generation, which dates back to 1975 and lasts until today, is based on a very large scale integration technology, which can fit more than 5,000 transistors on a single chip. This generation was represented by early microcomputers, such as Apple I and Apple II, which included keyboard, floppy disk drive, monitor and its own operating system. IBM joined the market in 1980 and announced IBM's Personal Computer (PC) in 1981. Since then, computers looked similar to what we know today, although their processing power has expanded rapidly. According to a very well known Moore's Law, every two years, computers double in power while costing half the price.

However, computers are only half of the story of the engine of what we now know as the Knowledge, New or Innovation Economy. The other side is the development of the internet, even a greater force in innovation, although hardly possible without a computer. The internet was also launched as a result of military driven research. At the time of the Cold War, following the 1957 launch of satellite the Sputnik, U.S. Congress passed legislation establishing the Advanced Research Project Agency (ARPA). With the Cold War as a backdrop, military officers grew

concerned about the potential impact of any nuclear war on its command and control system. Hence in 1968, ARPA awarded a contract to create a network based on packet-switching technology. While at the beginning ARPANET only connected four computers, the network grew slowly to about 20 users in 1968. The internet slowly shifted from a method of connecting to computers to a means of communications by creating mailing lists. As ARPANET grew in its importance among university researchers, in 1981, the National Science Foundation (NSF) created a civilian version called CSNET. In 1995, the NSF decided to withdraw its support, which enabled commercial providers to step in and use the internet for commercial use. The growth rate of traffic on the internet reached about 100 percent per year in the 1990s (Coffman and Odlyzko 1998, 1).

Some studies suggest that ICT companies accounted for as many as 3.5 million jobs in the U.S. in 2009. Employment in the sector declined since 2000, which could be due to the internet bubble burst and also due to global recession in 2008 and 2009. The average salary in the sector increased sharply and in 2009 stood at \$107,000, which is 80 percent higher salary than that of the average American worker. The salary increase between 1991 and 2009 in the ICT industry was 162 percent. During the same period, the ICT industry was contributing \$577 billion to the U.S. GDP per year. The ICT was also responsible for 28 percent of the U.S. productivity growth between 1995 and 2009 (Shapiro and Mathur 2011, 1).

According to the McKinsey Global Institute, the internet itself accounts for approximately 6 percent of GDP in advanced countries and 21 percent of GDP growth in the last five years in mature economies (McKinsey Global Institute 2011, 2). The

report also noted that due to the internet, 2.6 jobs were created for every job that disappeared (McKinsey Global Institute 2011, 3). Given that the internet was developed in the United States and many websites and services provided through the internet are provided by U.S. based companies, the U.S. is the global internet leader, receiving 30 percent of overall global internet revenues and 40 percent of the global net internet income (McKinsey Global Institute 2011, 4). Based on these statistics, the U.S. has a clear comparative advantage over other countries in the internet related services. This advantage stems from the fact that the internet was invented in the U.S. not very long ago and also due to extensive infrastructure that encouraged use of the internet by a substantial segment of the U.S. population in a relatively short period. In order to further realize benefits of the internet and related technologies, the U.S. needs to focus on policies that would further encourage new inventions in this area.

The importance of computers have not only impacted the productivity but also changed the structure of the U.S. labor market. Computers have replaced numerous office tasks such as filing and archiving documents, bookkeeping, and the way people communicate with each other in business and in their personal lives. While computers have made humans' work more efficient, they have not fully replaced many jobs as previously feared. Approximately 40 years ago, more than half of U.S. workers were divided between blue-collar and clerical jobs. Computers have changed the dynamics in the economy, leaving 40 percent of workers in blue-collar or clerical jobs. Computers and the internet have increased the number and salaries of managerial jobs and others on the upper scales of income distribution. Other jobs that have increased

were on the bottom rungs of the distribution scale. At the same time, the middle income employment opportunities have been declining (Levy and Murnane 2004, 3).

In addition to the increase of salaries for the upper income jobs, technological progress has created expectations for further education. Those jobs that pay well require additional experience and extensive training and skills. Many other jobs have completely changed over the last couple of decades. Previously, many tasks that required extensive use of work, such as typing and re-typing can now be easily and quickly replaced by copying and scanning. Research, previously entailing visits to library and access to hard copies publications, can now be often done solely through internet. Many jobs would now be extremely difficult to perform without access to the internet or without computers. Both individual jobs and whole economies are now relying on the information communications infrastructure as it advanced through the initial invention of computers and the internet.

Nevertheless, computers and the internet, although technical inventions differ from the previous inventions in the sense that they do not replace physical tasks, but rather improve processing of information. Many previous inventions were replacing physical labor by making it easier to produce goods or to more efficiently deliver services. Computers, the internet and related ICT services enable us to more effectively process, store and disseminate information. While many jobs are made more efficient, reflecting increases in productivity, that does not mean that they will be replaced. Some jobs will continue to require physical labor, such as those performed by waitresses and delivery men. Many professions on the top of the ladder,

such as surgeons or lawyers, are not going to be replaced either as they will require highly educated workers.

Innovation and its Impact on the U.S. Labor Market

Technological progress and innovation are often used interchangeably without being clearly defined. They often refer to the process of invention and diffusion of technology. According to the U.S. Department of Commerce 2008 Advisory Committee Report *Innovation Measurement: Tracking the State of Innovation in the American Economy*, the innovation is defined as the design, invention, development and/or implementation of new or altered products, services, processes, systems, organization structures, or business models for the purpose of creating new value for customers and financial returns for the firm (U.S. Department of Commerce 2008, 3).

Technological change or innovation can be measured indirectly through measuring the unexplained growth that cannot be explained by change in factor inputs, such as labor or capital. It is often called multifactor productivity or total factor productivity. Various studies suggest that one third or even as much as half of the U.S. economic growth is due to innovation.

Over the last couple of decades, manufacturing has experienced decline in employment. In the last decade alone, manufacturing employment shrank by about one third. The increase in productivity is one of the reasons for this decline. The increase of labor productivity in manufacturing between 1987 and 2010 was on average 3.4 percent a year (The U.S. Department of Commerce 2012, 6-5). Although such increases of productivity contribute to economic growth, it also means that companies are able to perform the same amount of work with fewer workers.

In addition to the impact of technological change on the number of jobs created or lost the impact on the type of jobs is just as important. Additionally, studies suggest that skill-biased technological change has been responsible for the recent increase in wage inequality in the U.S. (Katz 1999, 1). With increases to the relative wages of more educated workers, the U.S. labor market demand shift towards workers with higher education and training. One of the main technological changes over the last decade has been the use of computers, which may indicate one of the reasons for increased demand for skills. Already more than a decade ago, the use of computer on the job by U.S. workers jumped from 25 percent in 1984 to 51 percent in 1997 (Friedberg 1999, 3).

In addition to the increased demand for skilled labor, the impact of technological change on unskilled workers is significant as well. According to the study by Donald Davis, global technological change never increases wages of the unskilled workers. While the unskilled do not increase their relative wages, they may gain through increases of real wages. In his study, Davis found that the impact of technological progress on wages is independent of whether the progress is global or located locally within the economy (Davis 1996, 15).

Conclusion

Although there are not many studies showing the exact and direct impact of technological progress on the U.S. economy, most of the empirical evidence suggests that the world has benefited from technical change, largely through increases of productivity resulting in additional GDP growth. While increases in productivity deliver efficiencies in the production process, it also means that sometimes the same

output is possible with fewer workers. However, due to the invention of the internet and related ICT products, many other jobs have been created which would not otherwise exist. These are also well paid jobs in the area where the U.S. holds a comparative advantage and where it can reap substantial benefits. In addition to those jobs supported directly by the internet, computers and related ICT services, a number of jobs in the upper income level have been transformed and made more efficient. Jobs in the healthcare industry, managerial jobs, and other jobs where information processing is required, have benefited through increases of productivity and also by increases in pay premium. As a result, these jobs require more education but also reward higher skill level with increases in salaries.

In order to ensure that the workers are able to benefit from the changes brought on by technological progress, the U.S. economy needs to help its existing workforce and future workforce to develop the needed skills. If the U.S. economy does not provide its workforce with the necessary skill set needed by U.S. and foreign companies, the companies will have to look abroad. Given that the U.S. companies are competitive in the ICT industry, skills related to science, technology, engineering and mathematics (STEM) will continue to play an important role. These areas are not only needed by the economy, but can also educate future innovators who would be best positioned to come up with future inventions. Although the U.S. is still dominating the ranks of best colleges and universities worldwide, it is increasingly challenged by other countries in the area of basic education, from kindergarten through high school. In order for young adults to be able to pursue their university studies in the STEM field, they would need to have an adequate basic knowledge of

these subjects. However, only 26 percent of U.S. 12th graders are currently proficient in math, 38 percent are proficient in reading and only 21 percent are proficient in science (U.S. Department of Commerce 2012, 4-12).

In the area of college education, Americans face escalating prices. Just over the last 10 years, state public university tuition doubled and 2 year school fees increased by 71 percent. However, increases in education have not been matched by the increases in income, which went up only 18 percent over the same time period (U.S. Department of Commerce 2012, 4-10). The U.S. should expand its programs helping underprivileged students and those in need of financial aid. It should also review its K-12 educational materials to ensure that they are up to par with the employment challenges and opportunities presented in the 21st century. The U.S. was able to benefit from its universal educational platform in the past and should consider extending reforms to its educational system to raise the number of high school graduates and those taking up higher education. Not everyone can receive a Bachelor's or Master's Degree education, but workers should be encouraged and supported to at least finish their high school education which can be complemented by further specialized training. In many cases, this is already done through private-public partnerships, engaging companies and community colleges. Such training should be encouraged and supported by government grants as much as possible.

In addition to the critical role of education, the U.S. should update its infrastructure. This includes updates to road, bridges and rail networks, but also broadband and energy infrastructure. In order to benefit from the ICT advances, the workers need to be familiar with the computer and the internet. However, many rural

areas are still lacking internet access, which often prevents workers to develop the necessary skills needed for many employment opportunities. Also, many jobs are now posted online and workers may not have access to these postings without access to the internet.

In addition to the broadband infrastructure, which is not only needed for the workers, but also businesses that need to have access to reliable network, other infrastructure is just as important. While the U.S. does not face the infrastructure challenges similar to those of developing countries, where the road are not sufficient to accommodate basic transportation needs, it still needs to update its failing roads. On top of that, other countries have much better developed railroads, easing worker commute, and relieving some traffic from the roads. The increase of cars on the U.S. roads are causing not just social losses for the workers, but also efficiency and productivity losses, which could be spent in a more productive way, not to mention environmental damage, which may require future investments to limit the damage.

Since energy resources are limited and oil prices have consistently risen, thereby putting the brakes on the U.S. and global economic growth, the U.S. should continue to look into innovative ways to utilize renewable energy. The U.S. has been on the forefront in developing renewable technologies, which could provide new job opportunities. In addition to this direct boost of employment, the ability of companies to benefit from lower energy prices will provide them with incentive to put the production in the U.S. market. The U.S. industry and government continue to pay attention to the area of electricity smart grid and e-vehicles, which could provide

another technological boost to the U.S. economy and spill over into other areas of the U.S. economy.

Although the U.S. currently has a comparative advantage in many areas of high-technology and internet related products, receiving revenue from domestic and foreign sales of these products and services, it cannot remain complacent. If it wants to continue benefiting from this advantage it needs to nurture its industry. Since many inventions, such as the internet, benefited from the government support, it seems only natural that the U.S. should continue providing grants and other incentives for research and development. The U.S. currently provides an R&D tax credit, but it gets renewed on an annual basis. If the U.S. wants to provide its industry with a predictable business environment, such incentives need to be made available on a multi-year basis. Most of the breakthrough R&D does not come within a year, or even two, but it often takes several years. Companies cannot be expected to make such long term investments if they are not certain that these incentives will be there 12 months down the road.

Another important part of the puzzle mentioned already in the previous chapter, but very much relevant to technological change, is the importance of intellectual property protection. If companies cannot realize profits based on their initial investments, they will never take the risk of developing a new service or product. The U.S. IPR system can be well developed, but if U.S. companies feel that they cannot explore foreign markets unless they give up their proprietary information, they are not taking the full advantage of global markets. The U.S. cannot allow other countries benefiting from easy access and fair treatment in the U.S. market while not

getting its own share of benefits in foreign markets. In order for globalization to work, all countries need to play by the rules and stick to the commitments they have undertaken towards each other. The U.S. should not compromise and should work with the U.S. companies to identify areas where they face issues in foreign markets.

There are many other areas that can provide a boost to technological progress that may result in additional jobs in the U.S. economy, but fixing the bottlenecks mentioned above would be a good start. The U.S. is still home to most of the world's innovative companies due to its economic and also political system, but it needs to listen to its industries, in order to make sure that it continues to adapt to the challenges brought on by new technologies.

CHAPTER 5

POLICY RECOMMENDATIONS

Globalization, a phenomenon of the late 20th and recent 21st century, has proven to be a powerful engine of global economic growth. Providing new economic opportunities for the poorest around the world also mean that the U.S. economy has to adjust to its new role. Certain manufacturing and services, previously held by American workers, could be now more cheaply performed abroad. At the same time, the U.S. continued to lead on the path of innovation, becoming the world leader in the ICT and green technologies. As a result, the U.S. comparative advantage does not lie in cheap manufacturing but rather in innovative processes requiring a highly educated workforce.

The U.S. has no doubt benefitted from globalization by having access to cheaper goods but also by being able to sell U.S. products to customers around the world. It would be economically damaging for the U.S. to try to slow down or backtrack on globalization by scaling down its commitments to international trade and foreign direct investment. Rather, it should ensure that it is taking full advantage of its comparative advantage and nurture its business environment to benefit American companies and also foreign affiliates establishing subsidiaries in the U.S. that provide jobs for American workers.

This thesis has outlined that trade, investment and technological progress can result in job loss in the U.S., but all of them also create new jobs, many of which are often better-paid jobs than the ones that ceased to exist or were outsourced abroad.

However, in order to attract investment and to provide fertile ground for companies to innovate and produce competitive goods and services, the U.S. has to adopt domestic policies and work towards further liberalization and enforcement of rules internationally.

There are a number of domestic policies that could serve to stimulate the U.S. industry, which could in turn provide jobs. However, not all domestic policies are related to stimulating the business sector. As the thesis already outlined, it is not just industry that needs stimulation to create jobs, there also needs to be qualified workforce ready to perform the duties assigned to the job. Although new employment opportunities are created every day, this does not mean that there is always available workforce ready to accept these jobs.

Education

A main problem area is the disconnect between the skill set required from the worker by his previous employer and the training needed by the new employer. Although many employers are willing to train their workers, it often substantially increases the labor cost for hiring that particular worker, not to mention delays until he is fully capable to perform his job. For foreign companies comparing different markets for locating their production facilities, an educated and well-trained workforce is a key factor. Many companies are willing to pay the wage premium if they can get the right workers. If the U.S. wants to ensure full employment for its citizens, it needs to provide incentives for people to invest in education and training. In addition to grants and student loans to those who may otherwise not be able to

afford such education, the tax code can serve as a powerful tool to encourage re-training of those already in the workforce.

In many cases, tax incentives are limited, providing deduction to workers only if the training relates to one's current employment. This is counterproductive, as often those who need retraining need to adjust their skills to better reflect changing U.S. employment structure. Therefore, the tax incentives need to be adjusted so that the U.S. workers are better suited to the needs of those U.S. industries where U.S. currently holds comparative advantage.

Since U.S. companies became particularly competitive in the ICT and green technologies industries, an educated workforce in the area of STEM subjects is crucial. Although higher education is important for encouraging future innovations, it is also important that children are proficient in these subjects early on so that they are in a position to pursue higher education in these areas later. The U.S. educational system needs to put more emphasis on these subjects, especially for the K-12 age group. Obviously, not all children, and probably not even the majority of children, will have careers in the STEM field; however, basic knowledge of these areas will be helpful even to high school graduates, where this knowledge can be applied to factory jobs for the ICT and high manufacturing jobs, which have higher average pay.

Increased education does not necessarily mean that a person's job will remain secure forever and that it will not be outsourced or become redundant 20 years from now. However, education has proven to be a good option for the U.S. in previous decades and centuries, as the U.S. made extensive investments in primary, secondary and tertiary education in the 19th and 20th century. While the U.S. has had the lead

on many developing countries over the past decades, many of them started catching up. Average education attainment for the population aged 60-64 differs drastically between the U.S. and the rest of the world, with the U.S. having a clear lead. On the other hand, the gap of education attainment for younger people, ages 25-29, is closing quickly. While the U.S. seems to be hovering around 12 years (and perhaps even slightly dropping), China, Brazil, Russia, India, Brazil and Turkey are rising quickly. Some countries, such as Japan and Korea, have surpassed the U.S. and now stand at around 14 years. If the U.S. does not quickly adopt policies encouraging further education, its comparative advantage may change, resulting in a lower position in the global supply chain, impacting its wages and standard of living.

Recently, a number of studies were published to show increased income inequality in the United States. Unfortunately, the widening income gap also impacts the academic achievement gap depending on each family's socioeconomic status. According to a study by Sean Reardon, the difference in educational achievement by children from a family in the 90th percentile income versus children in the 10th percentile income has grown 30-40 percent in comparison to children born 25 years ago (Reardon 2011, 1). This development implies that the trend of income inequality will not change unless there are changes in social policies allowing children from all socioeconomic circumstances to have access to higher education.

In addition to enhancing the ability of parents to pay for education, where the government has an important role to play, other factors include the ability of parents to dedicate economic resources and the necessary time to stimulate children at a young age. Parents from lower socioeconomic status may not be able to stay at home

as much as those with higher income or be able to provide other extracurricular activities for their children outside of regular school hours. Since education is a critical element for a country's competitiveness, it cannot be left to the top 10 percent of the population to provide the educational basis for the employment needs of the whole country. In order for the U.S. to achieve full employment, it needs to ensure that all its citizens have access to the education to ensure U.S. competitiveness today and in the future. Education is certainly not the silver bullet. In order to fully benefit from globalization, each country must have the ability to benefit from its comparative advantage, which is where the international efforts come in place.

Infrastructure

Developed infrastructure is important for attracting foreign investment and for encouraging of technological progress and dissemination of innovations throughout the economy. Broadband infrastructure is particularly important to ensure that workers have access to the internet and are in a position to develop skills which may be needed for their future employment. Unfortunately, many communities in the U.S. still lack internet access which limits their training options and also access to job listings which may be only available online. Similarly to broadband infrastructure, foreign companies looking to expand their operations abroad will be comparing roads, bridges and rail infrastructure among various countries and in order for the U.S. to get their subsidiaries, it needs to be the best of them. Especially, because U.S. labor costs are higher than those of most countries, so it will have to offer foreign companies other advantages other than easy access to U.S. customers.

Comprehensive Tax Reform

U.S. competitiveness is seriously affected by its tax system, which has one of the highest statutory tax rates among OECD countries, and as such puts U.S. companies in disadvantage against its foreign competitors. It also serves as a big deterrent from receiving foreign investment. While, the effective tax rate in the U.S. is not that high, due to tax loopholes, the tax rate is unpredictable and does not affect all companies equally. Part of the overhaul should be the issue of the U.S. R&D tax credit, which has been extended on an annual basis rather than made permanent. Although the tax credit gets eventually extended every year, it does not provide sufficient predictability for companies to make long-term investments. Basic research may take several years and if companies have an option between locating their R&D in a country where the tax credit is permanent as opposed to relying on a possible extension every year, they will certainly choose the most stable option. Additionally, the government should provide workers with tax incentives to continue their education and training so that they can increase their value on the job market. University tuition and retraining costs should be made fully tax deductible for workers or companies that spend their funds to educate their employees.

International Trade Efforts

Basic theories of international trade and investment are based on the assumption that markets are free and open. Of course, developing countries cannot be expected to fully liberalize and open all of its markets, but there needs to be an appropriate contribution and commitment by all. Those who continue to benefit from the system should not shy away from commitments that would let others benefit as

well. For example, the U.S. has a comparative advantage in services. Although the U.S. is very open to trade in both manufacturing and services, it does not face the same access to third markets. Certain markets are relatively open, particularly those of developed countries, but certain countries continue to be rather closed. This is especially the case for large emerging economies that have benefitted from globalization the most. China, Brazil, India, Indonesia and Russia continue to have high barriers to trade (Jensen 2011, 182). Since trade and investment flows supporting U.S. jobs are often in the areas of advanced technologies and services, the U.S. needs to ensure that the companies have access to these markets and once they penetrate the market that their products and services are protected against IPR theft.

Protection of Intellectual Property Rights

U.S. products and services rely heavily on its patents and trademarks, so protection of IPR is crucial. Since many of the U.S. products require extensive investments in Research and Development and often take years reach the final phase of production, the U.S. should ensure that its companies are able to benefit from these investments. If companies feel that there is no or minimal return on their investments because their intellectual property is stolen, they will eventually refuse to make the investments. In order for the U.S. to continue to be competitive, the companies need to innovate and need to be able to make profits based on their work. The U.S. Trade Representative continues to monitor countries, which have weak IPR systems through the Special 301 Report. As a result, the U.S. should establish intensive bilateral dialogues with major offenders, which continue to be on the priority watch list in

order to push these countries to deliver further progress. The Obama Administration's newly announced Trade Enforcement Unit is certainly a good start.

However, protecting the interests of U.S. products and services by ensuring the enforcement of other countries' international commitments is not sufficient. The U.S. needs to address the imbalance between its open economy and closed economies of many of its trading partners. While there needs to be recognition that many developing countries are not in the position to take on the same ambitious level of commitments as the U.S. when it comes to international trade and investment, it is unacceptable that some countries implement industrial policies that have a direct negative affect on U.S. companies and U.S. competitiveness.

Such industrial policies in the area of investment restrictions limit U.S. companies' access to foreign markets. Some countries require technology transfer if companies want to establish facilities in their country. Many foreign governments also employ practices which unfairly support their domestic industry in their home market and abroad by giving them subsidies, preferential access to domestic resources, subsidized financing or regulatory advantage. All of these practices provide a disadvantage to U.S. companies in foreign markets, and affect their profits and ability to hire new workers. To the extent that some of these policies may not be adequately addressed multilaterally, the U.S. should coordinate with its allies, such as the EU, which face similar challenges in the emerging markets in order to develop multilateral disciplines curbing these practices. There will, of course, be difficulties getting emerging economies to agree to disciplines that would limit their ability to influence its domestic market to benefit its companies, but the U.S. should nevertheless apply as

much political pressure as possible in order to accomplish some of these multilateral commitments. Otherwise, the U.S. will increasingly face globalization, in which its competitors benefit more than the U.S.

Further Opening of Foreign Markets

The premise of economic globalization is based on economic theories that assume free trade and investment regimes, without government policies tilting the scale for its own country's business benefit. The U.S. should stand behind its private sector in order to fully benefit from its comparative advantage and to fully realize the benefits of the global trading system. With the rise of emerging economies, the U.S. should not compromise on its economic beliefs, in fear of retaliation. However, the international agenda and pressure on foreign countries to play by the rules needs to be complemented by domestic policies that would enable the U.S. to remain the world economic superpower it has been since the Second World War. Education, infrastructure investments, simple tax structure and a stronger social safety net are all important elements of U.S. competitiveness which have a potential for creating new employment opportunities for the American people.

Since it is recognized that globalization cannot be stopped or even slowed down, the U.S. needs to pay attention to its strengths and weaknesses. No country can afford to stay idle and rely on its past investments. While the U.S. was the leader of the second half of the twentieth century, many scholars questioned whether the U.S. would continue to lead or start falling behind. As other countries rise to the challenge, the U.S. should learn from its past successes but also its failures and focus on what is

important if it wants to be able to provide employment and a high standard of living for its citizens.

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