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JOURNAL OF ECONOMICS AND ECONOMIC EDUCATION RESEARCH

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LETTER FROM THE EDITOR

We are extremely pleased to present this issue of the *Journal of Economics and Economic Education Research*, an official publication of the Allied Academies' Academy of Economics and Economic Education Research, dedicated to the study, research and dissemination of information pertinent to the improvement of methodologies and effective teaching in the discipline of economics with a special emphasis on the process of economic education. The editorial board is composed primarily of directors of councils and centers for economic education affiliated with the National Council on Economic Education. This journal attempts to bridge the gap between the theoretical discipline of economics and the applied excellence relative to the teaching arts.

The Editorial Board considers two types of manuscripts for publication. First is empirical research related to the discipline of economics. The other is research oriented toward effective teaching methods and technologies in economics designed for grades kindergarten through twelve. These manuscripts are blind reviewed by the Editorial Board members with only the top programs in each category selected for publication, with an acceptance rate of less than 25%.

We are inviting papers for future editions of the *Journal for Economics and Economic Education Research* and encourage you to submit your manuscripts according to the guidelines found on the Allied Academies webpage at www.alliedacademies.org.

Dr. Larry R. Dale
Director Center for Economic Education
P. O. Box 2890
State University, AR 72467
e-mail; Dalex@cherokee.astate.edu
[870]-972-3416

ECONOMICS EDUCATION ARTICLES

TECHNOLOGY: CONNECTING THE MACRO WITH THE MICRO

Anne Macy, West Texas A&M University

ABSTRACT

This paper presents unique lecture material for a workshop on the role of technology in the economy. Technology is the vehicle to show the connection between macroeconomic and microeconomic concepts, a relationship neglected in many classrooms. The topic area is space and research and development (R&D). Technology's role in growth and development develops into the issue of public funding for R&D and NASA's technology transfer program. Tempur foam is examined as a successful innovation that evolved into a public company, the microeconomic application of a macroeconomic idea. History, government and mathematics are included to increase the applications of the lecture.

INTRODUCTION

In the current environment of testing combined with a lack of time in the classroom, economics becomes a more difficult subject to teach. Modern education requires that students understand the relationships between ideas and how those concepts interact. Unfortunately, integrating material is easier said than done. As one begins to draw the comparisons, the story becomes longer and the possibility that the students become lost increases. The length of the example and the knowledge gained by the students are sometimes inversely related. Thus, clear examples of economic ideas combined with other disciplines are needed to increase the opportunity to teach economics and the probability of student understanding. This paper presents a unique

way to consider the roles and interaction between basic macroeconomics and microeconomic concepts.

Through work for the West Texas Center for Economic Education, it became clear that one area the teachers found difficulty with is the production possibilities frontier (PPF). While they were able to define and apply it to simple issues, the teachers did not know how to connect it to microeconomics. To them, it is purely macro. While the production possibilities frontier is a macroeconomic idea, its movements affect the microeconomic world and visa versa. The PPF is dynamic not static. Thus, the issue becomes how the PPF affects the firm and how the firm affects the PPF.

By not showing the students how the entire economy interacts, the students are left without the ability to see how the macroeconomic ideas and policies of the country affect themselves as individuals and their firms. One reason young individuals vote at reduced levels to other age groups may be because they don't see how the various government actions affect them. Showing how macroeconomic ideas and microeconomic ideas are interrelated may encourage students to see themselves in the economy.

The Executive Summary of the National Summit on Economic and Financial Literacy focuses on the areas lacking in economic education (NCEE, 2002). In particular, economic education is important for informed citizens. It also identifies the need to integrated examples with other disciplines. The findings of the Survey of the States Report Card (NCEE, 2003) coincide with Executive Summary. Most states short change economic education even it they acknowledge its importance. Both reports note that the comprehensive understanding of an idea involves knowing how it affects and is affected by other concepts. This lecture addresses this concern.

As a focal point for the workshop, space was chosen. With the renewed interest in space, space technology is timely and interesting to students. In addition, space technology allows the teacher to integrate economics with science, history, government, and mathematics.

Economics is one discipline that connects the other disciplines to each other. Showing how the technology from space affects our everyday lives

increases the importance and relevance of science. Science benefits because economics tells us why it is important and how society uses it. A historical comparison is included to show how society has always explored and innovated. Government expenditures and the role of government funding for research adds a political element to the discussion. Mathematical extensions on the stock price of the private company are included to show how math is used in microeconomics. Thus, the lecture can be included in a variety of courses not just economics.

This paper presents the classroom material, which is divided into seven subtopics. The topics start with a broad macroeconomic idea and evolve into a discussion of a firm. Economic growth and development is the first topic, which leads into the role of technology. Reasons for public funding of space research and development (R&D) extend from technology and include a discussion of efficiency. A comparison with historical exploration provides the connection from public funding to the technology transfer of R&D. Finally, Tempur-Pedic International, Inc. is discussed as the microeconomic application of technology and economic growth and development.

CONNECTING ECONOMICS TO TECHNOLOGY: PEDAGOGY

Space is an engrossing topic for students. It provides the needed hook to engage not just the students but also the teachers. When the general public thinks of the National Aeronautics and Space Administration (NASA), the space shuttle and the international space station are immediately brought up. However, the public and the students forget about the amount of technological innovation it is taking to produce the international space station. The next step is to show how the technology innovation affects the students' homes.

While there are a multitude of space technologies invented, tempur foam is readily understood by every student. Some of the technologies from NASA are so complicated, that students are unable to fully grasp the idea.

Again, losing students before the lesson really begins. Tempur foam's best-known use is mattresses, a good which students easily understand.

ECONOMIC GROWTH & DEVELOPMENT: EMPHASIS ON TECHNOLOGY

The basic outline of the lesson is to start with economic growth and development and how the economy grows. In its basic form, the Solow growth model shows that there are three ways for an economy to grow. The economy can increase the quantity of labor or increase the quantity of capital. The economy can also grow via technological advances. The technological advances allow the existing labor and capital to be more productive. It increases the quality of our work. We are able to do more with fewer inputs. This is called capital and labor augmenting technical change.

The production possibilities frontier and its outward shift are introduced as a visual to show an economy growing. Technology advances allow society to be more productive. Greater productivity allows for greater consumption and a higher standard of living. The economy expands permanently. It is interesting to point out to the teachers and students that the expansion is permanent. Once we learn to do something, we don't forget. In addition, it is important to point out that the technology can be things like advances in health care not just a faster computer chip.

The expanding PPF leads to an increase in the standard of living for a country. For a country or company to remain as the leader, it must continue to innovate or else it will be surpassed by another country/company. Once knowledge or skills are made public, the information can be duplicated and improved. Countries and companies do not always respect patents and copyrights. Thus, a country/company must continue to improve or else fall behind. The continual growth results in a steadily increasing standard of living. The teacher can discuss with the students that countries with high investment in R&D have higher gross domestic product per capita than other countries. Notice that the responsibility for innovation rests with the country or company. Here is the first addition of microeconomics into the discussion. Not only does a country need to innovate to move ahead so does a company.

The final idea of this section is that technological innovation begets more technological innovation. This allows the PPF to shift out faster, steadily increasing the standard of living. Some students need a visual and an inverted triangle does the trick. Basic research is the research done in the bottom part that is very narrow. As innovations occur, they lead to more innovations and the economy moves up the triangle as the entire amount of R&D increases.

A common statement by a student is that a certain technology (usually for the military) hasn't benefited him/her personally. This allows the instructor to address the idea of public goods and public benefits versus private goods and private benefits. An innovation may improve society and as a member of society, it positively affects the student even if the individual can't document the improvement on personal standard of living.

REASONS FOR PUBLIC FUNDING OF R&D

After the instructor has established the role of technology in the PPF, the next step is to address whether the R&D into technology should be public or private. Basically, why don't we let firms do the R&D instead of the government?

The risk-return or cost-benefit relationship from the R&D is not favorable in the time frame firms require. As risk/costs increases so does the required return/benefit. But the return to some R&D initiatives cannot be projected with a great amount of certainty because space exploration has too many unknowns.

Market failure exists when there is a divergence between social and private costs and benefits of a particular activity. Research that generates growth has social benefits that exceed private benefits. Government can encourage research where the market would fail.

Notice how an instructor with an intuitive class can discuss the social benefits and the social costs of an innovation. A new technology may decrease the need for certain types of jobs. This frees up the labor for new uses. However, the news covers the loss in jobs and not the new jobs created by the increase in technology.

The next logical step is to discuss the characteristics for public funding of R&D. The lesson focuses on six main issues: cost, size, success, time frame, uses, and danger.

The first two issues are cost and size. Basic research is expensive. Firms conduct R&D on projects with a high probability of profit. Space exploration and R&D are too expensive for any one firm to undertake. In addition, the magnitude of this research is best handled by an entity of comparable size.

A related example is that of pharmaceutical firms that work on medications for diabetes, heart disease, arthritis, etc. Very little work is done on rare diseases, which usually are more deadly or debilitating but have very little profitability. New drugs for common ailments typically cost more than $300 million to innovate. A firm won't spend that amount of money unless it believes it can recoup the amount in profits.

R&D is an uncertain process. There are many more failures than there are successes. A private firm has profitability measures to meet. Failures could limit or eliminate the firm's ability to secure funding and maintain cash flows.

R&D takes a long time. NASA has 10-year and 25-year objectives. Financial markets want quarterly results. How would the average investor react if a firm announced it wouldn't be profitable for at least 10 years and then maybe not profitable at all even if its R&D were successful? The time frame of basic research does not match the time frame of Wall Street.

Profitable uses of basic research are not known at the time of innovation. Basic research can be applied to many different fields/industries. It may take years before the secondary products are developed. One example of this is electricity. Ask the students to think about how many current products use electricity. The products were developed after electricity. Electricity came first.

Space exploration is risky. It is one thing to design it on a computer and quite another to build a space station. The liability is cost-ineffective. How many lawyers would be ready to sue following a space death?

EFFICIENCY

Economies look for efficient solutions to problems. Public support of R&D allows the economy to deal with the free rider problem. Major technology advances benefit everyone. But if one person or firm had to pay the initial costs, it might not be undertaken. Even if a firm or an individual did do the research, others might use the benefits without ever having paid for the research. A free rider is an individual who receives a benefit without paying for it.

An example is national defense. We let the federal government organize and run the national defense because it is too costly and too difficult to do it individually. If an individual did form his own defense system, it is likely his neighbors would take free advantage of the system.

Public payment of R&D also involves externalities. Innovation has positive externalities. The marginal private benefit is less than the marginal private cost. It is not cost effective for a firm or individual to undertake the activity. However, the marginal social benefit is greater than the marginal private cost. Thus, by spreading the cost out over everyone, the individual cost is reduced and no one entity is burdened. In return, all of society earns the positive externalities.

The government supports certain activities that benefit all of society but are too expensive for many individuals to pay for on his/her own. First-time home ownership programs, education, roads, medical research and Social Security are examples.

Allocative efficiency results when the marginal social benefit equals the marginal social cost. If firms did do this research, the results would belong to the firm. The firm has an incentive to keep the technology a secret, thereby limiting its use. National funding of R&D allows for knowledge spillover to the entire economy. Various industries and firms can take the same technology and apply it to a specific product or technique. This increases national output and wealth at a greater pace than without knowledge spillover.

In essence, let the nation fund the basic research to build the mousetrap. Then let the firms improve and specialize the mousetrap for you and me.

So just how much does the United States spend on NASA? Table 1 shows the percentage of total federal government expenditures on NASA. Other major expenditures are included for comparison. From the chart, expenditures on NASA tend to range around 1%, substantially less than the amount on other areas.

Table 1: Expenditures on NASA

Percentage Distribution of Outlays by Agency: 1962-2003

Department or other unit	1962	1967	1972	1977	1982	1987	1992	1997	2002	2003
National Aeronautics & Space	1.2	3.4	1.5	1.0	0.8	0.8	1.0	0.9	0.7	0.7
Agriculture	6.0	3.8	4.8	5.7	6.1	4.9	4.1	3.3	3.4	3.4
Defense-Military	46.9	44.5	33.7	23.3	24.2	27.3	20.7	16.1	16.5	18.0
Energy	2.6	1.4	1.0	1.2	1.6	1.1	1.1	0.9	0.9	0.9
Health and Human Services	3.3	6.1	11.0	11.4	11.9	13.1	16.8	21.2	23.2	23.4

Table 1: Expenditures on NASA

Percentage Distribution of Outlays by Agency: 1962-2003

Transportation	3.6	3.3	3.1	2.9	2.4	2.3	2.1	2.3	2.8	2.4
Social Security	13.4	13.8	17.4	22.1	21.9	21.8	22.2	24.5	24.3	23.5
Administration (On and Off-budget)										

Source: Office of Management and Budget

COMPARISON WITH HISTORICAL EXPLORATION

Most economics classes are viewed as part of the social studies curriculum and taught by instructors with history backgrounds. It is beneficial to include a comparison with historical exploration. Historical exploration revolved around finding resources and information.

Exploration was a means to find resources. Referring back to the PPF, an increase in natural resources shifts out the frontier. The Spanish and Portuguese explorers wanted to find riches. There was a profit motive.

Historical exploration was also about finding information. What is out there? Lewis & Clark mapped the land of the Louisiana Purchase.

Exploration has always used technology. The Wright Brothers wanted a business but they also just wanted to fly and to be first.

Current exploration does not have the explicit profit function that earlier explorations had. There is a profit function but it has a much longer time frame than we are used to today. Lewis & Clark explored during

1804-06. The settlers came in the 1860s - 1880s, 60 to 70 years after the exploration. Very few firms have this type of time frame.

Current exploration is much more about finding information and using and developing technology. The technologies and information are meant for the public. But the time frame involved means the gains are for the future public. The time frame implies an altruistic nature to basic research and exploration. The gains are for other generations.

TECHNOLOGY TRANSFER

After establishing the role of technology for economic growth and development, the reasoning for public funding of innovations is presented. The next step is the tie-in with microeconomics. Capitalism relies on firms to meet consumer demands. Public funding for R&D allows for allocative efficiency for the initial innovations. Once the basis has been developed, firms take over. This is called technology transfer.

In 1962 NASA started its technology transfer program by which technologies could be transferred to companies enabling the firms to develop commercial products.

Some of the everyday products or services that use NASA technology and have been a part of the technology transfer program are listed in Table 2. It is not an exhaustive list but meant to give the students a flavor of some areas NASA as influenced.

Table 2: Technology Transfers by NASA

Communications	Everyday products	Transportation	Healthcare	Computer industry
Satellites	Rechargeable batteries	Airplanes	Textured medical implants	Internet
UHF television transmitters	Cameras	Ability to fly in bad weather	Hip and Knee artificial implants	Photo-imaging

Table 2: Technology Transfers by NASA

Communications	Everyday products	Transportation	Healthcare	Computer industry
Wireless communication	High temperature electrical insulation	Inflight control system	Ultraviolet blocking material	Networking
GPS	Lubricating products	Turbo engines	Pacemaker	Logistics
Weather prediction models	Food and beverage packaging	Suspension systems for autos	X-ray machines and ultrasound (photography)	Structural analysis software for bridges, skyscrapers, cars, etc

A logical question is to ask what types of technology NASA deems successful. The Space Technology Hall of Fame has five criteria in its selection process.

The first criterion is economic benefit. Higher ratings are given to technology that has been the basis of or a significant part of a successful product or company. Additional points are awarded for those technologies that were developed from a partnership with the private sector. In other words, NASA does not want its R&D to be done in isolation. It wants private firms to be actively involved from the beginning.

A third criterion is the amount of public awareness a technology has generated and if it highlights the benefits of space R&D. Technology is also judged on its impact on society and how long of an impact or commercial application the technology has.

TEMPUR-PEDIC

While the microeconomic aspect of the workshop has been hinted at, it now moves to the forefront of the discussion. Tempur-Pedic is a 1998 inductee into the Hall of Fame for Space Technology. Tempur is a foam that is temperature sensitive and adjusts to weight and temperature changes. In

the 1970s, scientists at the Ames Research Center originally developed tempur foam to relieve the intense pressure of G-forces experienced by astronauts during rocket launches. Innovating firms were Ames Research Center (NASA), Becton Dickinson Dynamic Systems, and Southwest Research Institute. Notice how the initial research includes Becton Dickinson, a private company.

In the early 1980s, NASA released the technology to the public through the tech transfer program. One of the original innovators saw the potential of tempur foam and developed it under the name Tempur Foam. By 1989, Tempur-Pedic, Inc. was formed. Eventually, it became Tempur World.

There are have been numerous spin-offs for products such as mattresses, footwear, wheelchairs, hospital beds, etc. Tempur foam has been added to helmets to better protect the head. Individuals bound to wheelchairs or beds use the tempur foam to relieve the stress of sitting or lying down all day.

Numerous other firms have licensed the technology to develop their own good. Fagerdala World Foams of Sweden was one of the original firms to find applications of the technology for mattresses and cushions. Modellista Footware used tempur foam for shoe cushioning. In addition, the shoes are resistant to blood, urine and other elements and is used in the health care field.

Venture capital was used to fund the young company. Venture capital is equity funding from private investors. It is difficult to obtain and because of the risk, venture capitalists want a high return. Venture capitalists don't enter the life cycle of a business until it has a proven product. Thus, venture capitalists wouldn't fund the initial R&D to innovate tempur foam but they would fund the development of tempur foam into its various uses.

After Tempur-Pedic demonstrated sales and profitability, the entrepreneurs decided to sell the entire firm to the venture capitalists, which took the company public. In November 2002, two venture capitalist groups, TA Associates and Friedman, Fleischer & Lowe, formed Tempur-Pedic International to purchase Tempur World for $268.00 million plus $88.8 million in refinancing. Going public means to sell stock in the company to outsiders and to have the stock traded on an exchange. It is also called an initial public offering (IPO). The firm is able to gain capital but with a loss

of autonomy over the firm because now it is responsible to the shareholders. The IPO allows the venture capitalists to get their money back through the sale of stock.

The investment banks that took Tempur-Pedic public were Lehman Brothers and Goldman, Sachs & Co. Investment banks are financial institutions that assist firms in issuing stock, setting the initial price, complying with the rules and regulations of the Securities & Exchange Commission, and selling the stock. The commissions investment banks receive are called flotation costs.

It went public on December 18, 2003 on the New York Stock Exchange under the ticker symbol TPX. The initial price for the IPO was $14.00, of which $0.91 of each share went to the investment banks. The stock rose to $15.50 on its first day.

For those classes with a little more time and interest, the prices can be examined in greater detail. From the Yahoo! Finance website, one is able to download the historical closing prices into an Excel spreadsheet. Using the time period set by the instructor, a stock price chart can be generated. Table 3 shows the prices of the first two months of TPX. The students can also access a stock price chart at various Internet sites including bigcharts.com and stockcharts.com.

Students can also find the average price, the minimum and maximum of the stock price as in Table 4. The instructor is able to discuss the volatility of the stock price and how stock prices fluctuate with demand and supply for the stock. For example, the stock price rose on the first day from $14.00 to $15.50, indicating demand was greater than supply. The closing stock price has ranged from $14.74 to $17.90 over the first two months.

An alert student will note that the supply of stock in a firm is perfectly inelastic. There are a limited number of shares outstanding or available for purchase. Every share of stock is not traded every day. Instead buyers and sellers meet in the marketplace of the New York Stock Exchange each day to conduct trades. The number of buyers versus the number of sellers determines the price at that time. The example is reinforcing the ideas of demand and supply presented earlier in the class.

Table 3: Stock Prices for TPX					
Date	Stock Price	Date	Stock Price	Date	Stock Price
12/18/03	$15.50	1/12/04	$17.40	2/3/04	$17.00
12/19/03	$15.25	1/13/04	$17.76	2/4/04	$17.35
12/22/03	$15.36	1/14/04	$17.63	2/5/04	$16.83
12/23/03	$15.24	1/15/04	$17.90	2/6/04	$17.07
12/24/03	$14.90	1/16/04	$17.35	2/9/04	$17.17
12/26/03	$14.74	1/20/04	$16.20	2/10/04	$17.00
12/29/03	$14.75	1/21/04	$16.00	2/11/04	$17.00
12/30/03	$15.09	1/22/04	$16.38	2/12/04	$17.10
12/31/03	$15.50	1/23/04	$17.07	2/13/04	$16.60
1/2/04	$15.75	1/26/04	$17.32	2/17/04	$16.50
1/5/04	$16.15	1/27/04	$17.25	2/18/04	$16.44
1/6/04	$16.54	1/28/04	$17.00	2/19/04	$16.25
1/7/04	$16.62	1/29/04	$16.34	2/20/04	$16.25
1/8/04	$16.75	1/30/04	$16.20	2/23/04	$16.45
1/9/04	$16.88	2/2/04	$17.09	2/24/04	$16.14

Table 4: Descriptive Statistics for TPX	
Mean Price	$16.47
Median Price	$16.54
Minimum Price	$14.74
Maximum Price	$17.90
Standard Deviation	0.123

To finish the circle all one has to note is that Tempur Pedic pays taxes, which can be used by the government to fund further R&D to innovate new technologies for economic growth and development, which can be used by other firms to make goods for customers creating a higher standard of living for all.

CONCLUSIONS

Connecting macroeconomics and microeconomics demonstrates to students the dynamic nature of the economy. Instead of viewing growth and development as an isolated idea from the profitability of a firm, the integration of the ideas allows students a deeper understanding of the working of the economy. By completing the circle within the extended example of tempur foam, the progressive nature of innovation is more easily seen. As a result, students have a better understanding of how the economic cycle works. This workshop was been conducted several times with great success. In particular, the teachers appreciated the integration of macroeconomic and microeconomic ideas, noting that nothing else like it was in the standard textbooks. In addition, the inclusion of history, government and mathematics increased the likelihood of the lecture material being used in the classroom. Because so many states have knowledge or skills requirements, Table 5 presents the key vocabulary terms so the teachers can match the lessons with their evaluation rubrics.

If a goal of economic education is to increase the analytical skills of students, examples that show the integration of ideas must be presented to assist the students in their development of critical thinking skills. Technology can be a very general term to students. However, its role in economic growth and development of a country and of a firm is very specific.

Table 5: Keywords

	Economics	
Allocative efficiency	Capital & labor augmenting technical change	Economic growth & development
Externalities	Flotation costs	Free rider
Inelastic supply curve	Initial public offering	Investment banks
Knowledge spillover	Market failure	Private benefits and costs
Production possibilities frontier	Productivity	Profit motive

Table 5: Keywords		
	Economics	
Public benefits and costs	Public funding	Public goods vs. private goods
Research & development	Solow growth model	Standard of living
Stock prices	Technology	Venture capital
	Mathematics	
Mean	Median	Standard deviation

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ECONOMICS ARTICLES

SMALL MENU COSTS AND LARGE BUSINESS CYCLES: AN EXTENSION OF THE MANKIW MODEL

Hiranya K. Nath, Sam Houston State University
Robert Stretcher, Sam Houston State University

ABSTRACT

Using a multi-period general equilibrium model, this paper can be used to enhance classroom presentation of new Keynesian theory by extending the results of Mankiw (1991) by showing that monopolistically competitive firms may require 'relatively large' menu costs to dissuade them from changing prices in response to an aggregate demand shock that is perceived to be permanent. Thus, "small" menu costs may be insufficient to contribute to large business cycles.

INTRODUCTION

It is by now a commonly accepted view among economists that nominal rigidities are the most apt characterization of the short run behavior of the economy. However, the theories that have been proposed to explain sluggish adjustments of prices and wages are varied and numerous. [1] One of the theories that gained popularity among a section of economists in recent years suggests that firms are required to incur some costs to change prices. These costs are often associated with printing menus, and therefore referred to as 'menu costs'. According to this menu costs theory, since changing prices is costly, many firms do not respond immediately to a shock by changing prices, and as a result, real variables such as output have to bear the brunt. Some economists, however, cast doubts about this explanation because these menu costs are evidently small.

Using partial as well as general equilibrium models, Mankiw (1991) shows that these small menu costs are in fact capable of producing large business cycles. Considering monopolistically competitive firms that set prices, he shows that though menu costs may be small, the incremental profits that result from price changes may be even smaller and, therefore, firms are better off by not changing prices in response to a demand shock. In Mankiw's model the decision of the firm depends on a comparison between one-time menu costs and the change in single-period profit. This paper argues that if the firms consider changes in their future stream of profits that would result from the decision to change price then 'small menu costs' may not be able to dissuade them from changing prices. It essentially extends the results of Stretcher (2002), which presents a partial equilibrium analysis of non-market clearing firm to show that introduction of the opportunity cost of capital to discount future incremental profits will reduce the ability of 'small menu costs' to generate large business cycles. In this paper, we build a general equilibrium model which differs from the one in Mankiw (1991) in two ways: first, the representative consumer maximizes life-time utility that involves inter-temporal transfer of resources. Second and more importantly, the monopolistically competitive firm bases its decision to change price on a comparison of the menu costs either with the change in single-period profit, or with the discounted present value of the changes in all future profits, depending upon whether it perceives the aggregate demand shock to be temporary or permanent.

The rest of the paper is organized as follows. Section 2 presents a general equilibrium model, with maximizing rules for consumers and firms. In section 3, we introduce menu costs and discuss how they affect firms' price setting behavior. This section also includes the main propositions of this paper. Section 4 includes a few concluding remarks.

A GENERAL EQUILIBRIUM MODEL WITH MONOPOLISTICALLY COMPETITIVE FIRMS

The economy consists of a continuum of monopolistically competitive firms, distributed along the unit interval.

Consumers and Preferences

We assume that the economy is populated by a large number of identical infinitely-lived consumers. The representative consumer has time-separable preferences summarized by the following utility function:

$$U=\sum_{t=0}^{\infty}\beta^{t}\left((1-\phi)^{-1}\int_{0}^{1}y_{i,t}^{1-\phi}di+\theta\log\left(\frac{M_t^d}{P_t}\right)-L_t\right) \tag{1}$$

where $0<\beta<1$ is the discount factor, $y_{i,t}$ is the quantity of good i consumed in period t, ϕ is the reciprocal of the elasticity of substitution between different goods produced by the firms and $0<\phi<1$, M_t^d is the individual's money demand in period t, P_t is the general price level, L_t is the labor supply[2], and θ is the money demand parameter ($\theta>0$). The general price level P_t is the geometric average of all $P_{i,t}$s, where $P_{i,t}$ is the nominal price of the good produced by firm i in period t, and is given as follows:

$$P_t=\exp\left(\int_{0}^{1}\log P_{i,t}di\right) \tag{2}$$

The consumer earns wage income by supplying labor, and interest income from lending in the previous period. She also receives money supply. In addition to spending on consumption, the consumer lends. Thus the budget constraint for the representative consumer is given by

$$\int_{0}^{1}P_{i,t}y_{i,t}di+B_t+M_t^d=W_tL_t+R_{t-1}B_{t-1}+M_t+\Pi_t \tag{3}$$

where W_t is the nominal wage[3] in period t, B_t is the amount lent in period t, R_t is the interest rate in period t, M_t is the money supply and Π_t is the total profits of the firms. Note that Walras's Law requires that the profits of the firms go to the individual. The individual, however, considers profits as fixed in her utility maximization problem.

Firms and Production

Each firm produces its output using labor only, and the technology is given by the production function:

$$y_{i,t} = L_{i,t} \tag{4}$$

where $L_{i,t}$ is the labor input used by firm i in period t. Thus the cost function of the firm is given by:

$$C_{i,t} = W_t L_{i,t} = W_t y_{i,t} \tag{5}$$

The firm faces a demand function implied by the utility maximization and the firm chooses $y_{i,t}$ and $P_{i,t}$ in each period such that its profit is maximized.

Utility and Profit Maximization

The representative consumer maximizes her life-time utility given by equation (1) subject to her budget constraint given by equation (3). The first-order conditions are given below:

$$\beta^t y_{i,t}^{-\phi} - \lambda_t P_{i,t} = 0 \tag{6}$$

$$\beta^t \theta \frac{1}{\frac{M_t^d}{P_t}} \frac{1}{P_t} - \lambda_t = 0 \tag{7}$$

$$-\beta^t + \lambda_t W_t = 0 \tag{8}$$

$$\lambda_t - E_t \lambda_{t+1} R_t = 0 \tag{9}$$

$$\int_0^1 P_{i,t} y_{i,t} di + B_t + M_t^d - W_t L_t - R_{t-1} B_{t-1} - M_t - \Pi_t = 0 \quad (10)$$

Note that λ_t is the Lagrange multiplier for the budget constraint (3) in the consumer's utility maximization problem. Rearranging equation (8), we have

$$\lambda_t = \frac{\beta^t}{W_t} \quad (11)$$

Substituting into equations (6), (7) and (9), and rearranging we obtain

$$y_{i,t} = \left(\frac{W_t}{P_{i,t}} \right)^{\frac{1}{\phi}} \quad (12)$$

$$W_t = \frac{M_t^d}{\theta} \quad (13)$$

$$R_t = \frac{1}{\beta} E_t \frac{W_{t+1}}{W_t} \quad (14)$$

Equilibrium in the money market implies that money supply equals money demand. Thus,

$$M_t = M_t^d \quad (15)$$

Substituting (15) into (13), we obtain:

$$W_t = \frac{M_t}{\theta} \quad (16)$$

Then substituting (16) into (12) and (14),

$$y_{i,t} = \left(\frac{M_t}{\theta P_{i,t}} \right)^{\frac{1}{\phi}} \tag{17}$$

and

$$R_t = \frac{1}{\beta} E_t \frac{M_{t+1}}{M_t} \tag{18}$$

Rearranging equation (17)

$$P_{i,t} = \frac{M_t}{\theta y_{i,t}^{\phi}} \tag{19}$$

This is the inverse demand function faced by firm i in period t. Also, substituting for W_t from (16) into the cost function (5), we obtain

$$C_{i,t} = \frac{M_t}{\theta} y_{i,t} \tag{20}$$

The implied profit function can be written as:

$$\pi_{i,t} = \left(y_{i,t}^{1-\phi} - y_{i,t} \right) \frac{M_t}{\theta} \tag{21}$$

Firm i chooses $y_{i,t}$ in such a way that $\pi_{i,t}$ is maximized. The first-order condition of profit maximization yields:

$$\left((1-\phi) y_{i,t}^{-\phi} - 1 \right) = 0$$

This implies

$$y^{*}_{i,t} = (1-\phi)^{\frac{1}{\phi}} \tag{22}$$

where $y^{*}_{i,t}$ is the profit maximizing output of firm i in period t. Substituting for $y_{i,t}$ into equation (19) we obtain the following profit-maximizing price for firm i in period t:

$$P^{*}_{i,t} = \frac{M_t}{\theta(1-\phi)} \tag{23}$$

As we can see from equations (22) and (23), a change in money supply does not affect the profit-maximizing choice of output of firm i. It affects price only. Under *ceteris paribus,* a one percent increase in money supply will increase the price of firm by one percent. Thus, if all firms fully adjust prices in response to a monetary shock, then the general price level will take the entire brunt of the shock leaving output unaltered.

Menu Costs and the Firm's Decision to Change Price

Suppose the firm is required to incur a cost to change price. Following Mankiw (1991), we assume that changing price involves a small labor input g. Thus, let the menu cost of firm i be

$$z_{i,t} = g_t(i)\, W_t = g_t(i)\, \frac{M_t}{\theta} \tag{24}$$

The firm's decision to change price depends on a comparison of these costs with potential gains from such a change.

To start with, suppose the money supply is M_0 in each period and each firm chooses quantity and price according to equations (22) and (23), that maximize its profits. Let y_0 and P_0 be the profit-maximizing quantity and price in each period corresponding to this money supply. Suppose that suddenly the money supply is changed to M_1 in period t. If the firm decides

to change its price, then the new price will be given by (23). Otherwise, it remains at

$$P_0 = \frac{M_0}{\theta(1-\phi)}$$

.

The nominal wage, however, changes from

$$W_0 = \frac{M_0}{\theta} \qquad \text{to} \qquad W_1 = \frac{M_1}{\theta} \ .$$

Through product demand (equation (17)), output changes from

$$y_0 \qquad \text{to} \qquad y_1 = \left(\frac{M_1}{M_0}\right)^{\frac{1}{\phi}} y_0 \ .$$

The firm's decision to change price is based on whether the incremental profit that results from the change in price outweighs the menu cost. However, it is important to consider whether the firm perceives the shock to be transitory or permanent.

When the Monetary Shock is Perceived to be Transitory

If the firm perceives the change in money supply to be transitory, it will compare the menu cost with the increment in profit in period t only. Because if the shock is temporary then the money supply in the next periods will be M_0, and y_0 and P_0 will still be the profit-maximizing quantity and price. In that case, the marginal firm I that is indifferent over changing price would be

$$I = g^{-1}\left(\frac{\Delta\pi_{i,t}}{W_1}\right) = g^{-1}\left(\left(y_0^{1-\phi} - y_1^{1-\phi}\right) - \left(y_0 - y_1\right)\right) \qquad (25)$$

If i<I, then the firm finds it profitable to change price even though it has to incur the menu cost. If i>I, on the other hand, the firm leaves its price unaltered at P_0 and produces y_1. Thus:[4]

PROPOSITION 1: Following a monetary shock that is perceived to be transitory, if zi > $\left(\left(y_0^{1-\phi}-y_1^{1-\phi}\right)-\left(y_0-y_1\right)\right)W_1$, *then the firm does not change its price to* P_1.

When the Monetary Shock is Perceived to be Permanent

If the firm perceives the change in money supply to be permanent, on the other hand, it will compare the menu cost with the discounted present value of all future increments in profit in period t onwards. Because if the shock is permanent then the money supply in all subsequent periods will remain at M_1. If the firm does not change price then y_1 will be the output in period t and in all subsequent periods. In that case, the marginal firm I that is indifferent over changing price would be

$$I=g^{-1}\left(\sum_{k=0}^{\infty}\left(\prod_{l=1}^{k}R_{t+l-1}\right)\frac{\Delta\pi_{t+k}}{W_1}\right)=g^{-1}\left(\left[\left(y_0^{1-\phi}-y_1^{1-\phi}\right)-\left(y_0-y_1\right)\right]\left[1+R_t^{-1}+\left(R_tR_{t+1}\right)^{-1}+...\right]\right) \quad (26)$$

From equation (18),

$$R_{t+l}=\frac{1}{\beta} \qquad \text{for all } l = 0,1, 2, 3..... \quad (27)$$

Thus, (26) becomes

$$I=g^{-1}\left(\sum_{k=0}^{\infty}\left(\prod_{l=1}^{k}R_{t+l-1}\right)\frac{\Delta\pi_{t+k}}{W_1}\right)=g^{-1}\left(\left[\left(y_0^{1-\phi}-y_1^{1-\phi}\right)-\left(y_0-y_1\right)\right]\left[1+\beta+\beta^2+.....\right]\right) \quad (28)$$

$$=g^{-1}\left(\left[\left(y_0^{1-\phi}-y_1^{1-\phi}\right)-\left(y_0-y_1\right)\right]\frac{1}{(1-\beta)}\right)$$

If i<I, then the firm changes price; otherwise, it leaves its price unchanged at P_0. Thus,

PROPOSITION 2: Following a monetary shock that is perceived to be permanent, if $z_i > \left(\left[\left(y_0^{1-\phi} - y_1^{1-\phi}\right) - \left(y_0 - y_1\right)\right]\frac{1}{(1-\beta)}\right)W_1$, *then the firm does not change its price to* P_1.

It is not difficult to show that[5]

$$\left(\left[\left(y_0^{1-\phi} - y_1^{1-\phi}\right) - \left(y_0 - y_1\right)\right]\frac{1}{(1-\beta)}\right) > \left(\left(y_0^{1-\phi} - y_1^{1-\phi}\right) - \left(y_0 - y_1\right)\right)$$

Thus for given menu costs, the number of firms changing prices in the latter case will be larger than in the former. In other words, if the firms perceive the monetary shock to be permanent they will require relatively larger menu costs to dissuade them from changing prices. In both cases, total output is

$$Y_t = \int_0^1 y_{i,t}\,di = Iy_0 + (1-I)y_1$$

The general price level is

$$P_t = \exp\left(\int_0^1 \log P_{i,t}\,di\right) = \exp\left(I\log P_1 + (1-I)\log P_0\right)$$

When a monetary shock is perceived to be transitory, for given zis (even if it is small), I will be closer to 0, and most firms will not change price. We will thus observe a relatively larger effect of the monetary shock on output. On the other hand, if the monetary shock is perceived to be permanent, I will be closer to 1 and most of the shock will be absorbed by changes in prices. In that case, small menu costs may not be a likely cause of large business cycles.

CONCLUDING REMARKS

Using a simple general equilibrium framework, this paper shows that if the firms perceive the aggregate demand shock to be permanent they may require 'not small' but 'relatively large' menu costs to dissuade them from changing prices. In that case, their decision to change prices will depend on a comparison between one-time menu costs and discounted present value of all future incremental profits that would result from such price changes. This enhances the traditional presentation of the Mankiw price rigidity model to include discounting of future profits when comparing to menu costs. This is especially useful when consistency (concerning a positive opportunity cost of capital) between macro results and microfoundational models is desired.

ENDNOTES

1. For a comprehensive survey of these competing theories, see Blinder et al (1998) and Taylor (1998)

2. We may split this labor supply, by making the consumer decide the amount of labor she is willing to supply to each firm. But since labor is perfectly mobile across firms this 'twist' in the model is inconsequential. Also, the market clearing in the labor market requires that this labor supply is exactly equal to the total demand for labor by the firms in the economy.

3. Since labor is mobile across firms, nominal wage rate is the same in all firms.

4. If the shock is, in fact, temporary and the firm responds to the shock by changing its price to P_1 then in the next period it will have to change the price back to P_0. In that case, the firm will incur the menu costs twice and therefore will compare $2z_i$ with the incremental profit in order to make a decision about price change. It reinforces Mankiw's (1991) result.

5. For example, for a value $\beta = 0.95$, the first term of this inequality is 20 times higher than the second term.

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DEMAND-ORIENTED TRADE EQUILIBRIUM OF MULTI-NATIONAL ECONOMIES

Baoping Guo, University Of Northern Virginia

ABSTRACT

This paper proposes a new international trade model, the demand-oriented trade model, to examine the interdependence and interaction of multi-country economies. It reflects realistic considerations in international trade practice: intermediate input, mobile factors across countries, intra-industry trade, and technology differences. The model emphasizes that taste-based internationalized demand plays an important role in the equilibrium of multi-national economies. This paper provides an approach to process demand-oriented trade analysis, which is a weak part in existing trade models. It introduces an account matrix of international trade to explore the production-trade structure of multi-national economies. The study demonstrates that there are five basic equilibriums in international trade and production: the factor resource constraint equilibrium; the intermediate input output equilibrium of production; the equilibrium of final goods transacted from the domestic supply to the internationalized demand; the price equilibrium; and the reciprocal equilibrium between the internationalized demand and the domestic factors. All of them, with reductions, exist both in the Ricardo model and in the Heckscher-Ohlin model. The higher dimension (k factors, n sectors, and m countries) model of this paper is an "uneven number" model, which allow the number of factors to be not equal to the number of commodities. This paper also introduces the matrix of factor content of trade flows and a new measurement for factor abundance based on real imports and exports.

INTRODUCTION

Multi-national economies can be considered as a system of interdependence and interaction processes by trade and factor mobility. A direct interdependence between two countries arises whenever the output or export of one nation becomes an input or import of another.

Both the Ricardo model and the Heckscher-Ohlin model emphasize that the two countries' economies are an integrated production-trade system and on that the economic equilibrium of two countries is the integrated production-trade equilibrium.

The Heckscher-Ohlin model and the Heckscher-Ohlin theorem demonstrated the basis for comparative advantage and the effects that trade had on factor earnings in the two countries. Many efforts have been made to extend the Heckscher-Ohlin model to explain the reality of world trade for the last four decades. There has been considerable progress in the literature on the studies in intermediate goods, mobile factors, intra-industry trade, effects of different technologies, and higher dimension application models. Vanek (1968) proposed a multi-factor and multi-good model, which is often referred to the HOV model. This model has led to a lot of empirical researches (such as Leamer, 1980; Trefler, 1993; 1995). Davis and Weinstein (2001b) estimated technology matrix across the OECD countries and used it to test the HOV equation. Other literatures have studied the influence of public intermediate goods on the fundamental theorem in traditional trade theories (Kahn, 1980; Okamoto, 1985; Altenburg, 1987).

This paper introduces a new international trade model, the demand-oriented trade model. It incorporates intermediate input, factor mobility, intra-industry trade, consumption taste, and technology differences to form an integrated trade model. This paper introduces an account matrix of international trade to describe the trade flows and factor mobility flows in multi-country economies. It illustrates that when trade networks multi-national economies, there are five basic structural equilibriums. The first one is the equilibrium between factor mobility and output with both domestic and international factor mobility. The second is the equilibrium among intermediate input, final goods, and output, which is presented by a traditional Leontief multi-region input-output function. The third is the trade

equilibrium of final goods, which depicts the transaction equilibrium from domestic supply to internationalized demand. The fourth is the factor-demand reciprocal equilibrium, which demonstrates a direct relationship between domestic factor and internationalized demand. The fifth is the international price equation, which shows how factor price determines commodity price when considering intermediate input and factor mobility across countries. The study shows that both the Ricardo model and the Heckscher-Ohlin model are special reduced cases of the demand-oriented trade model.

This paper also provides an analytical approach to prove the Ricardian law of comparative advantage with the help of demand-oriented trade analysis. The study proposes the higher dimension (k factors, n sectors, and m countries) demand-oriented trade model to simulate the trade connections of the real world. The paper introduces the matrix of factor content of trade flows and a measurement for factor abundance based on real imports and exports.

ACCOUNT MATRIX OF INTERNATIONAL TRADE

We begin by proposing an account matrix of international trade in this section, to give a general picture of the trade flows and factor mobility in multi-national economies. The Account Matrix of International Trade (AMIT) is a square matrix to depict domestic trade flows, international trade flows, intermediate trade flows, final goods trade flows, and international mobile factors, for multi-national economies. It is very similar to the SAM (social account matrix) in nation-wide economic analysis, but it is in the framework of multi-national economies. It consists of row and column accounts that represent the different sectors of a multi-national economy at the desired level of disaggregating. By convention, each account in the AMIT is represented by one row and one column of the table; each cell represents a physical quantity imported (or expenditure) by the column account and a quantity exported (or income) by the row account. The underlying principle of double-entry accounting requires that the total revenue of exports (row total) must equal the total expenditure of imports (column total) for each account in the AMIT. The AMIT is a visual

framework for displaying multi-country, multi-sector, and multi-factor economic structure that integrates input-output flows, import-export flows, and factor flows into a comprehensive and consistent dataset. Once an AMIT is constructed, it provides a static image, or a snapshot, of the multi-country production-trade structure.

Table 1. Account Matrix of International Production and Trade

			Intermediate Output				Final Goods					
			Country H		Country F		Country H		Country F		Supply	Output
			1	2	1	2	1	2	1	2	y	x
Intermediate Input	Country H	1	x_{11}^{HH}	x_{12}^{HH}	x_{11}^{HF}	x_{12}^{HF}	y_{11}^{HH}	0	y_{11}^{HF}	0	y_1^H	x_1^H
		2	x_{21}^{HH}	x_{22}^{HH}	x_{21}^{HF}	x_{22}^{HF}	0	y_{22}^{HH}	0	y_{22}^{HF}	y_2^H	x_2^H
	Country F	1	x_{11}^{FH}	x_{12}^{FH}	x_{11}^{FF}	x_{12}^{FF}	y_{11}^{FH}	0	y_{11}^{FF}	0	y_1^F	x_1^F
		2	x_{21}^{FH}	x_{22}^{FH}	x_{21}^{FF}	x_{22}^{FF}	0	y_{22}^{FH}	0	y_{22}^{FF}	y_2^F	x_2^F
							u_1^H	u_2^H	u_1^F	u_2^F		Factor
Factor Input	Country H	L	v_{11}^{HH}	v_{12}^{HH}	v_{11}^{HF}	v_{12}^{HF}	z_{11}^{HH}	z_{12}^{HH}	z_{11}^{HF}	z_{12}^{HF}		L^H
		K	v_{21}^{HH}	v_{22}^{HH}	v_{21}^{HF}	v_{22}^{HF}	z_{21}^{HH}	z_{22}^{HH}	z_{21}^{HF}	z_{22}^{HF}		K^H
	Country F	L	v_{11}^{FH}	v_{12}^{FH}	v_{11}^{FF}	v_{12}^{FF}	z_{11}^{FH}	z_{12}^{FH}	z_{11}^{FF}	z_{12}^{FF}		L^F
		K	v_{21}^{FH}	v_{22}^{FH}	v_{21}^{FF}	v_{22}^{FF}	z_{21}^{FH}	z_{22}^{FH}	z_{21}^{FF}	z_{22}^{FF}		K^F

Table 1 is such a hypothetical account matrix of international trade, which describes a production-trade system of two factors (capital K and labor L), two countries (H and F), and two goods (1 and 2).

There are four phases in the table. Phase I (the left-bottom corner in the table) depicts the factor mobility of two countries. The Heckscher-Ohlin model assumes that factors are perfectly mobile within each country and not mobile internationally. This paper assumes that factors may move both domestically and internationally. But these international movements might be incomplete because of various barriers. The factor flows in Phase I can be described by a matrix

$$V = \begin{bmatrix} v_{L1}^{HH} & v_{L2}^{HH} & v_{L1}^{HF} & v_{L2}^{HF} \\ v_{K1}^{HH} & v_{K2}^{HH} & v_{K1}^{HF} & v_{K2}^{HF} \\ v_{L1}^{FH} & v_{L2}^{FH} & v_{L1}^{FF} & v_{L2}^{FF} \\ v_{K1}^{FH} & v_{K2}^{FH} & v_{K1}^{FF} & v_{K2}^{FF} \end{bmatrix} \tag{1}$$

where V is the factor mobility matrix, its typical element v_{sj}^{hf} is the quantity of factor s from country h input in sector j in country f; $h,f=H,F$; $s= L,K$; and j=1,2.

Phase II (the left-upper corner of the table) shows the trade flows of intermediate goods. It can be described by the following matrix,

$$X=\begin{bmatrix} x_{11}^{HH} & x_{12}^{HH} & x_{12}^{FH} & x_{12}^{FH} \\ x_{21}^{HH} & x_{22}^{HH} & x_{12}^{HH} & x_{12}^{HH} \\ x_{12}^{HF} & x_{12}^{HF} & x_{11}^{FF} & x_{12}^{FF} \\ x_{12}^{HF} & x_{12}^{HF} & x_{21}^{FF} & x_{22}^{FF} \end{bmatrix} \tag{2}$$

where X is the trade flow matrix of intermediate goods; its typical element x_{ij}^{hf} is the quantity of output i in country h used in sector j in country f; $h,f=H,F;\ i,j$=1,2.

Phase III (the right-upper corner of the table) illustrates the trade flows of final goods, which can be denoted as

$$Y=\begin{bmatrix} y_{11}^{HH} & 0 & y_{11}^{HF} & 0 \\ 0 & y_{22}^{HH} & 0 & y_{22}^{HF} \\ y_{12}^{FH} & 0 & y_{11}^{FF} & 0 \\ 0 & y_{22}^{FH} & 0 & y_{22}^{FF} \end{bmatrix} \tag{3}$$

where Y is the trade flow matrix of final goods; its typical element y_{ii}^{hf} is the quantity of final goods i made in country h exported to country f.

The pattern of final goods trade flows of matrix Y is different from the pattern of intermediate trade flows of matrix X in that all elements y_{ij}^{hf}=0 for i not equal to j, because there is no sector category in the consumption of final goods. A country, as whole, is in one count of the consumptions of final goods.

We clarify the terms used here. We refer the final goods produced in a country to the supply of final goods (briefly as supply) and refer the final goods consumed in a country to the demand of final goods (briefly as demand).

The row sum of matrix Y is the supply of final goods, i.e.

$$y = Yl$$

where

$$y = \begin{bmatrix} y_1^H \\ y_2^H \\ y_1^F \\ y_2^F \end{bmatrix} \tag{4}$$

y is the vector of the supply of final goods for two countries; its typical element y_i^h is the supply of final goods i in country h; l is the identical vector, and all its elements are 1.

The column sum of matrix Y is the demand of the final goods, i.e.

$$u = Y^T l$$

where

$$u = \begin{bmatrix} u_1^H \\ u_2^H \\ u_1^F \\ u_2^F \end{bmatrix} \tag{5}$$

u is the vector of demand of final goods; its typical element u_i^h is the quantity of demand of good i in country h.

In autarky, the supply of final goods equals the demand for the final goods. After trade, the supply is still the domestic supply, but the demand is the internationalized demand. This is an important characteristic in an open economy.

The expression of final goods flows Y is the critical foundation for all the following discussions of this paper. To make it clear, we explain now it in another way. The supply of final goods can be divided into two parts. One part is the final goods produced in the host country and consumed in the host country. The other part is the final goods produced in the host country and exported to the foreign country. The vector of supply in a country, h, can be expressed as.

$$y^h = y^{hh} + y^{hf} = \begin{bmatrix} y_1^{hh} \\ y_2^{hh} \end{bmatrix} + \begin{bmatrix} y_1^{hf} \\ y_2^{hf} \end{bmatrix} \tag{6}$$

where y^h is the vector of final goods of country h; y^{hh} is vector of supply of final goods produced in country h and consumed in country h; and y^{hf} is vector of final goods produced in country h and exported to country f; $h=H,F$.

The matrix of final goods flows actually is arranged by

$$Y = \begin{bmatrix} diag(y^{HH}) & diag(y^{HF}) \\ diag(y^{FH}) & diag(y^{FF}) \end{bmatrix} = \begin{bmatrix} y_1^{HH} & 0 & y_1^{HF} & 0 \\ 0 & y_2^{HH} & 0 & y_2^{HF} \\ y_1^{FH} & 0 & y_1^{FF} & 0 \\ 0 & y_2^{FH} & 0 & y_2^{FF} \end{bmatrix} \tag{7}$$

where $diag(y^{hf})$ is the diagonal matrix of vector y^{hf}, its diagonal elements are the elements of vector y^{hf}, all non-diagonal cells are zero.

International trade can be considered as a substitution for international mobility of factors. Phase IV (in the right-bottom corner of the table) shows such substituted factor flows, which illustrates the factor content of trade flows in phase III. We denote the factor content of trade flows as

$$Z = \begin{bmatrix} z_{L1}^{HH} & z_{L2}^{HH} & z_{L1}^{HF} & z_{L2}^{HF} \\ z_{K1}^{HH} & z_{K2}^{HH} & z_{K1}^{HF} & z_{K2}^{HF} \\ z_{L1}^{FH} & z_{L2}^{FH} & z_{L1}^{FF} & z_{L2}^{FF} \\ z_{K1}^{FH} & z_{K2}^{FH} & z_{K1}^{FF} & z_{K2}^{FF} \end{bmatrix} \tag{8}$$

where Z is the substituted factor flows matrix; its typical element z_{sj}^{hf} is the substituted amount of factor s from country h input in sector j in country f, which is the factor content behind trade flow y_{ii}^{hf}.

We will discuss the properties of the matrix of substituted factor flows and its computation in detail in a later section of this paper.

DEMAND-ORIENTED TRADE MODEL

We will derive the demand-oriented international trade model in this section, based on the structure of trade flows and mobile factors shown in Table 1.

The proposed demand-oriented international trade model is comprised of the five equations below.

Intermediate Input Output function

The row direction of phases II and III in table 1 shows the distribution equilibrium of output. This equilibrium can be expressed by

$$x = Ax + y \tag{9}$$

where

$$A = \begin{bmatrix} a_{11}^{HH} & a_{12}^{HH} & a_{12}^{FH} & a_{12}^{FH} \\ a_{21}^{H} & a_{22}^{H} & a_{12}^{HH} & a_{12}^{HH} \\ a_{12}^{HF} & a_{12}^{HF} & a_{11}^{FF} & a_{12}^{FF} \\ a_{12}^{HF} & a_{12}^{HF} & a_{21}^{FF} & a_{22}^{FF} \end{bmatrix} \quad \text{and} \quad x = \begin{bmatrix} x_1^H \\ x_2^H \\ x_1^F \\ x_2^F \end{bmatrix}$$

x is a vector of output; its typical element x_i^h is the output of good i in country h; A is a coefficient matrix of intermediate input in a two-country framework; it is defined by

$$A = X[diag(x)]^{-1}$$

where *diag(x)* is the diagonal matrix of vector x, its main diagonal elements are the elements of vector x and all other elements are zeros.

Equation (9) is a typical Leontief multi-regional input-output equilibrium. The international production-trade system should include the multi-national input-output processes of production.

The Trade Function of Final Goods

If we introduce an import coefficient matrix:

$$C=Y[diag(u)]^{-1}$$

where *diag(u)* is the diagonal matrix of vector *u*, its main diagonal elements are the elements of vector *u* and all other elements are zeros.

The trade transaction equilibrium of final goods in Phase III can be presented as

$$y=Cu \tag{10}$$

where

$$C=\begin{bmatrix} c_{11}^{HH} & 0 & c_{11}^{HF} & 0 \\ 0 & c_{22}^{HH} & 0 & c_{22}^{HF} \\ c_{11}^{FH} & 0 & c_{11}^{FF} & 0 \\ 0 & c_{22}^{FH} & 0 & c_{22}^{FF} \end{bmatrix} \tag{11}$$

C is the import coefficient matrix of final goods; its typical element c_{ii}^{hf} signifies the amount of good i that is made in country h and consumed in country f per the demand of the good in country f.

One characteristic of matrix C is that each column sum 1, i.e.,

$$C^T l=l \tag{12}$$

where l is an identity vector.

Matrix C reflects the international taste pattern or import pattern of the two countries. And equation (10) demonstrates how the domestic supply of final goods is transacted into the internationalized demand after trade for a given taste pattern.

Factor Resource Constraint Function

Assuming full-employment conditions, factor resource constraint can be presented as:

$$v = Bx \tag{13}$$

where

$$v = \begin{bmatrix} L^H \\ K^H \\ L^F \\ K^F \end{bmatrix}, \qquad B = \begin{bmatrix} b_{L1}^{HH} & b_{L2}^{HH} & b_{L1}^{HF} & b_{L2}^{HF} \\ b_{K1}^{HH} & b_{K2}^{HH} & b_{K1}^{HF} & b_{K2}^{HF} \\ b_{L1}^{FH} & b_{L2}^{FH} & b_{L1}^{FF} & b_{L2}^{FF} \\ b_{K1}^{FH} & b_{K2}^{FH} & b_{K1}^{FF} & b_{K2}^{FF} \end{bmatrix}$$

v is the vector of factor inputs; L^h is the labor resource in country h; K^h is the capital resource in country h; B is the coefficient matrix of primary inputs, its typical element b_{sj}^{hf} signifies the amount of input of factor s from country h to sector j in country f per output j in country f.

A new feature of this function is that it may include mobile factors across countries.

Demand-Oriented Factor Equilibrium

Equation (9) can be rewritten as

$$x = (I - A)^{-1} y \tag{14}$$

Substituting equation (10) into equation (14) yields

$$x = (I - A)^{-1} cu \tag{15}$$

where I is identity matrix, its main diagonal elements are 1 and all other elements are zeros.

It shows the demand-oriented output equilibrium.

Substituting equation (14) into equation (13) yields

$$v=B(I-A)^{-1}y \tag{16}$$

It illustrates the supply-oriented factor equilibrium.

Further more, substituting equation (15) into equation (13) yields

$$v=B(I-A)^{-1}Cu \tag{17}$$

It demonstrates the demand-oriented factor equilibrium.

When the number of factors equals the number of commodities (the so-called even number case) and when $B(I-A)^{-1}C$ is nonsingular, equation (17) can be reversed as

$$u=C^{-1}(I-A)B^{-1}v \tag{18}$$

Equation (17) and (18) establish the reciprocal relationships between the domestic factor inputs and the internationalized demand. The factor requirement by equation (17) is demand-oriented, and the demand equilibrium by equation (18) is endowment-factor-oriented. The factor requirement in equation (17) is the total requirement of factors, because $B(I-A)^{-1}$ is the coefficient matrix of the global total requirement; it includes both primary factor requirements and intermediate factor requirements (see Feenstra, 2004, 37; Davis & Weinstein, 2001a). Differencing from the total factor requirement used by Davis and Weinstein (2001a), which is a domestic total requirement, the global total requirement of factors in this paper may deal with international intermediate input and international factor movements.

International Price Function

Along the column direction from Phase II through Phase I in table 1, we can find the components of the costs of production of each sector. The total value of any output should be equal to the total value of factor inputs in it plus the total value of intermediate inputs in it under the zero-profit conditions. This can be calculated by

$$p^TX+w^TV=p^Tdiag(x) \tag{19}$$

where

$$w = \begin{bmatrix} w_1^H \\ w_2^H \\ w_1^F \\ w_2^F \end{bmatrix}, \qquad p = \begin{bmatrix} p_1^H \\ p_2^H \\ p_1^F \\ p_2^F \end{bmatrix}$$

diag(x) is a diagonal matrix in which the elements of the vector of output x appear in its main diagonal cells and zeros appear in the other cells; p is the vector of price; its typical element p_i^h is the price of good i in country h; w is the vector of factor price; its typical element w_s^h is the price of factor s in country h.

The price in equation (19) is an international price, in which both factor price and commodity price are measured by a single currency, such as USD or EUR.

Matrixes X and V can be expressed as

$$X = A \cdot diag(x) \tag{20}$$

$$V = B \cdot diag(x) \tag{21}$$

Substituting equations (20) and (21) into (19) yields,

$$p^T A \cdot diag(x) + w^T B \cdot diag(x) = p^T \cdot diag(x) \tag{22}$$

It can be reduced as

$$p^T A + w^T B = p^T \tag{23}$$

Transposing it yields

$$p = (I - A^T)^{-1} B^T w \tag{24}$$

This is the price equation both with intermediate input and with primary factor input. The price in equation (24) is an absolute price rather

than an index price. One property of the price is that the total value of final goods valued by commodity price equals the total value of factor inputs valued by factor price, i.e.,

$$p^T y = w^T v \tag{25}$$

The proof of it is given in Appendix A in the end of this paper.

Demand-Oriented Trade Model

The intermediate input output equation (9), factor resource constraint function (10), trade function (13), demand-oriented factor requirement (17), and price function (24), as whole, comprise the demand-oriented trade model, which demonstrates the equilibriums of international production-trade from various angles. The basic assumption for the demand-oriented trade model is that commodities are produced under constant returns to scale.

The demand-oriented trade model proposed in this paper is a practical and theoretical extension of the Heckscher-Ohlin model. It uses the trade function of final goods to establish the trade connection; realizes the Linder consumption taste in the model structure; reflects intra-industry trade both in intermediate good trade and in final goods trade; includes mobile factors across countries; and includes different technologies across countries. The model emphasizes that consumption tastes play an important role in the equilibrium of multi-national economies. Differing from the Heckscher-Ohlin theorem that predicts trade direction from factor earnings and factor abundance, the demand oriented trade model predicts the requirement of domestic factors from taste-based international demand and describes the structure interdependences of the multi-national production-trade system. Like the Leontief input-output analysis, the demand-oriented trade model can serve as a policy simulation tool.

The economy is marked-oriented; international trade is demand-oriented. The demand-oriented trade model implies that the production and the supply of a country is oriented both by its domestic demand and by international demand. The equilibrium of the international

economy is the demand-supply equilibrium of all trading countries; and the multi-national demand-oriented development can benefit all the countries.

The analysis in this section is summarized in the following proposition.

Proposition - In open economic system, the output of any country in the system is oriented by the supply of final goods, i.e. $x=(I-A^T)_{-1}y$, which is driven by the internationalized demand of the final goods, i.e. $y=Cu$. The domestic factor requirement of all countries are finally allocated by the internationalized demand of whole system, i.e. $v=B(I-A^T)^{-1}Cu$.

DISTRIBUTION OF FACTOR CONTENT OF TRADE FLOWS

The factor content of trade flows or "substituted" factor flows accompanying trade flows, mentioned in section 2, can be expressed by:

$$Z=B(I-A)^{-1}Y \tag{26}$$

or

$$Z=B(I-A)^{-1}C\cdot diag(u) \tag{27}$$

where *diag(u)* is the diagonal matrix of vector *u*.

It has the following three properties:

The first property is that the row sum of the matrix of the substituted factor mobility is equal to the factor vector, i.e.,

$$Zi=v \tag{28}$$

The proof of this property is given in Appendix B at the end of this paper.

The second is that the column sum of the matrix of the substituted factor mobility valuated by factor price is equal to the column sum of the matrix of final goods valued by commodity price, i.e.,

$$w^T Z = p^T Y \tag{29}$$

It is proved in Appendix C at the end of this paper.

The last one is that when trade is zero, *(y=u and C=I)*, the matrix of the substituted factor flow is equal to the matrix of real factor flows. i.e.,

$$V = Z \tag{30}$$

Appendix D shows the proof of this property.

Phase I in table 1 can be regarded as a block of GDP content of factor inputs in a two-country framework; its monetary sum by factor earning rate is the GDP of the two countries from income approach. Phase III is the block of GDP content of trade flows; its monetary sum by commodity price is the GDP of two countries from expenditure approach. Phase IV is the block of factor content of trade. As we discussed above, the total monetary values of all elements in each block of the threes are the same, i.e.

$$w^T Z = p^T Y = w^T V$$

ENHANCING THE HECKSCHER-OHLIN MODEL

"The Heckscher-Ohlin approach was primarily supply-oriented because it focused on factor endowments and factor intensities" (Appleyard & Field, 2001, 164). We will present the Heckscher-Ohlin model by using the framework of the demand-oriented model to enhance it on the trade-based demand analysis in this section.

Trade Flows of Inter-Industry Trade

The trade flows in equation (3) are intra-industry flows. The trade flows both in the Ricardo model and in the Heckscher-Ohlin model are

inter-industry, because only the good intensive in the country's abundant factors (or the good produced in comparative advantage) should be traded. We can reduce the intra-industry trade flows in equation (3) into inter-industry trade flows only. Assume that country H is K-abundant; country F is L-abundant; and good 1 is K-intensive; good 2 is L-intensive. By these assumptions, country H would export good 1 and country F would export good 2. The trade flow matrix of equation (3) can now be reduced to inter-industry trade flow as,

$$Y = \begin{bmatrix} y_{11}^{HH} & 0 & y_{11}^{HF} & 0 \\ 0 & y_{22}^{HH} & 0 & 0 \\ 0 & 0 & y_{11}^{FF} & 0 \\ 0 & y_{22}^{FH} & 0 & y_{22}^{FF} \end{bmatrix} \tag{31}$$

Suppose that country *H* exports π of good 1 to country *F* and that the term of trade is α . Country *F* would export $\alpha\pi$ of good 2 to country H. The trade flow matrix above now can be written as,

$$Y = \begin{bmatrix} y_1^H - \pi & 0 & \pi & 0 \\ 0 & y_2^H & 0 & 0 \\ 0 & 0 & y_1^F & 0 \\ 0 & \alpha\pi & 0 & y_1^F - \alpha\pi \end{bmatrix} \tag{32}$$

The column sum of matrix *Y* is the internationalized demand,

$$u = Y^T l = \begin{bmatrix} y_1^H - \pi \\ y_2^H + \alpha\pi \\ y_1^F + \pi \\ y_2^F - \alpha\pi \end{bmatrix} \tag{33}$$

It is a general expression of demand for inter-industry trade pattern both for the Ricardo model and for the Heckscher-Ohlin model.

Gains-from-Trade Function

The gains from trade are evaluated by domestic prices in classical models. In autarky, supply equals demand. The difference between the demand and supply after trade is net import. The gain from trade by sectors can be expressed as

$$g_{sector} = \begin{bmatrix} g_1^H \\ g_2^H \\ g_1^F \\ g_2^F \end{bmatrix} = diag(p)\cdot(u-y) = diag(p)\cdot\left(\begin{bmatrix} y_1^H - \pi \\ y_2^H + \alpha\pi \\ y_1^F + \pi \\ y_2^F - \alpha\pi \end{bmatrix} - \begin{bmatrix} y_1^H \\ y_2^H \\ y_1^F \\ y_2^F \end{bmatrix}\right) = diag(p)\cdot\begin{bmatrix} -\pi \\ \alpha\pi \\ \pi \\ -\alpha\pi \end{bmatrix} = \begin{bmatrix} -p_1^H \\ \alpha p_2^H \\ p_1^F \\ -\alpha p_2^F \end{bmatrix}\pi \qquad (34)$$

where g_{sector} is the vector of gains from trade by sectors of two countries; *diag(p)* is a diagonal matrix in which the elements of the vector of price p appear in the main diagonal cells and zeros appear in the other cells.

The gains from trade by country, or the gain-from-trade function, can be presented as:

$$g = \begin{bmatrix} g^H \\ g^F \end{bmatrix} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}\begin{bmatrix} g_1^H \\ g_2^H \\ g_1^F \\ g_2^F \end{bmatrix} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}\begin{bmatrix} -p_1^H \\ \alpha p_2^H \\ p_1^F \\ -\alpha p_2^F \end{bmatrix}\pi = \begin{bmatrix} -p_1^H + \alpha p_2^H \\ p_1^F - \alpha p_2^F \end{bmatrix}\pi \qquad (35)$$

where *g* is the vector of gains from trade for two countries.

Enhanced Heckscher-Ohlin Model

The Heckscher-Ohlin model can be presented as a special case of the demand oriented trade model if we reduce the later by assuming (1) no intermediate input, i.e. A =0, (2) no factor mobility across countries, i.e. $b_{sj}^{hf}=0$, for $f \neq h$, (3) that the two countries have the same technology in production, i.e. $b_{sj}^{HH} = b_{sj}^{FF}$, and (4) that there exists only inter-industry trade as expressed in equation (31).

Table 2. Account Matrix of the H-O Model

			Intermediate Output				Final Goods					
			Country H		Country F		Country H		Country F		Supply	Output
			1	2	1	2	1	2	1	2	y	x
Intermediate Input	Country H	1					y_{11}^{HH}	0	y_{11}^{HF}	0	y_1^H	x_1^H
		2					0	y_{22}^{HH}	0	y_{22}^{HF}	y_2^H	x_2^H
	Country F	1					y_{11}^{FH}	0	y_{11}^{FF}	0	y_1^F	x_1^F
		2					0	y_{22}^{FH}	0	y_{22}^{FF}	y_2^F	x_2^F
							u_1^H	u_2^H	u_1^F	u_2^F		Factor
Factor Input	Country H	L	v_{11}^{HH}	v_{12}^{HH}								L^H
		K	v_{21}^{HH}	v_{22}^{HH}								K^H
	Country F	L			v_{11}^{FF}	v_{12}^{FF}						L^F
		K			v_{21}^{FF}	v_{22}^{FF}						K^F

Table 2 showed the trade flows and factor mobility for the Heckscher-Ohlin model.

There is no intermediate input in the Heckscher-Ohlin model so that equation (9) now is reduced to

$$x = y \tag{36}$$

Substituting it into equations (10) and (17), associating it with the gains-from-trade function (35), we get the set of equations of the demand-oriented-style Heckscher-Ohlin model as,

Price function: $$p = B^T w \tag{37}$$

Trade function: $$x = Cu \tag{38}$$

Resource constraint: $$v = Bx \tag{39}$$

Gains-from-trade function $$g = \begin{bmatrix} -p_1^H + \alpha p_2^H \\ p_1^F - \alpha p_2^F \end{bmatrix} \pi \tag{40}$$

Demand-Oriented Factor Equilibrium $$v = BCu \tag{41}$$

where

$$B=\begin{bmatrix} b_{L1} & b_{L2} & 0 & 0 \\ b_{K1} & b_{K2} & 0 & 0 \\ 0 & 0 & b_{L1} & b_{L2} \\ 0 & 0 & b_{K1} & b_{K2} \end{bmatrix}, \qquad C=\begin{bmatrix} 1 & 0 & c_{11}^{HF} & 0 \\ 0 & 1-c_{22}^{FH} & 0 & 0 \\ 0 & 0 & 1-c_{11}^{HF} & 0 \\ 0 & c_{22}^{FH} & 0 & 1 \end{bmatrix}$$

$$c_{22}^{FH}=\frac{\alpha\pi}{y_2^H+\alpha\pi}, \qquad c_{11}^{HF}=\frac{\pi}{y_1^F+\pi}$$

The major improvement of the enhanced Heckscher-Ohlin model in this section is to introduce the trade function and the gain-from-trade function to this classical trade model to strength its trade side expression.

THE RICARDO MODEL BY DEMAND-ORIENTED ANALYSIS

David Ricardo's model explains international trade in terms of differences in labor productivity. It was to highlight the importance of comparative advantage. It assumes that there is only one factor, labor, in the two-country two-good system. In Ricardo's original presentation of the model, it was focused exclusively on the supply side. Only later did John Stuart Mill introduce demand into the model. We will present the Ricardo model by the framework of the demand-oriented trade model to enhance its demand analysis. We also will provide an analytical approach to prove the Ricardian law of comparative advantage in this section.

Table 3. Account Matrix of the Ricardo Model

			Intermediate Output				Final Goods					
			Country H		Country F		Country H		Country F		Supply	Output
			1	2	1	2	1	2	1	2	y	x
Intermediate Input	Country H	1					y_{11}^{HH}	0	y_{11}^{HF}	0	y_1^H	x_1^H
		2					0	y_{22}^{HH}	0	y_{22}^{HF}	y_2^H	x_2^H
	Country F	1					y_{11}^{FH}	0	y_{11}^{FF}	0	y_1^F	x_1^F
		2					0	y_{22}^{FH}	0	y_{22}^{FF}	y_2^F	x_2^F
							u_1^H	u_2^H	u_1^F	u_2^F		Factor
Factor Input	Country H	L	v_{11}^{HH}	v_{12}^{HH}								L^H
	Country F	L			v_{11}^{FF}	v_{12}^{FF}						L^F

Table 3 presents the trade flows of the Ricardo model, in which it is assumed that country H has a comparative advantage in the production of good 1 and country F has a comparative advantage in the production of good 2.

The Ricardo model can be considered as the reduced demand-oriented trade model without intermediate inputs, without the international mobility of factor, and with only inter-industry trade. It can be expressed as follows:

Price function: $$p = B^T w \quad (42)$$

Trade function: $$x = Cu \quad (43)$$

Resource Constraint function: $$v = Bx \quad (44)$$

Demand-oriented Factor Equilibrium $$v = BCu \quad (45)$$

Gains-from-trade function $$g = \begin{bmatrix} -p_1^H + \alpha p_2^H \\ p_1^F - \alpha p_2^F \end{bmatrix} \pi \quad (46)$$

where

$$v = \begin{bmatrix} L^H \\ L^F \end{bmatrix}, \qquad B = \begin{bmatrix} b_1^{HH} & b_2^{HH} & 0 & 0 \\ 0 & 0 & b_1^{FF} & b_2^{FF} \end{bmatrix}, \qquad w = \begin{bmatrix} w^H \\ w^F \end{bmatrix}, \qquad x = \begin{bmatrix} x_1^H \\ x_2^H \\ x_1^F \\ x_2^F \end{bmatrix},$$

$$C = \begin{bmatrix} 1 & 0 & c_{11}^{HF} & 0 \\ 0 & 1-c_{22}^{FH} & 0 & 0 \\ 0 & 0 & 1-c_{11}^{HF} & 0 \\ 0 & c_{22}^{FH} & 0 & 1 \end{bmatrix}, \qquad c_{22}^{FH} = \frac{\alpha\pi}{y_2^H + \alpha\pi}, \qquad c_{11}^{HF} = \frac{\pi}{y_1^F + \pi}$$

We assume that the wage rate is one for both the countries to reflect the original thought of labor theory of value during the Ricardo time, in which the wage rate was evaluated by the unit equivalent labor hour. The price then is

$$p = B^T w = \begin{bmatrix} b_1^{HH} & 0 \\ b_2^{HH} & 0 \\ 0 & b_1^{FF} \\ 0 & b_2^{FF} \end{bmatrix} \begin{bmatrix} 1 \\ 1 \end{bmatrix} = \begin{bmatrix} b_1^{HH} \\ b_1^{HH} \\ b_1^{FF} \\ b_2^{FF} \end{bmatrix} \tag{47}$$

Substituting it into equation (46) yields:

$$g = \begin{bmatrix} -b_{L1}^{HH} + \alpha b_{L2}^{HH} \\ b_{L1}^{FF} - \alpha b_{L1}^{FF} \end{bmatrix} \pi \tag{48}$$

When trading between the two countries, the international terms of trade lies within the limits set by the price ratios in autarky.

The trade condition or criteria for the Ricardian model should be that the gains from trade for both the countries are greater than zero, i.e.,

$$g = \begin{bmatrix} -b_{L1}^{HH} + \alpha b_{L2}^{HH} \\ b_{L1}^{FF} - \alpha b_{L1}^{FF} \end{bmatrix} \pi > 0 \tag{49}$$

This implies that

$$-b_{L1}^{HH} + \alpha b_{L2}^{HH} > 0 \tag{50}$$

$$b_{L1}^{FF} - \alpha b_{L1}^{FF} > 0 \tag{51}$$

Writing equations (50) and (51) together, we obtain the following expression:

$$\frac{b_{L1}^{HH}}{b_{L2}^{HH}} < \alpha < \frac{b_{L1}^{FF}}{b_{L2}^{FF}} \tag{52}$$

Inequalities (52) are just the limits of the terms of trade in the Ricardo model. This is the essence of what the Ricardian law stated. We can say now that we did prove the Ricardian law of comparative advantage analytically by the gains-from-trade function.

Equations (42) through Equation (46) depict the general production-trade equilibriums of the Ricardo model with trade structure.

HIGHER DIMENSION MODEL

We will extend the 2 x 2 x 2 demand-oriented international trade model discussed above to the higher dimension model in this section.

Suppose that there is an integrated international economic system with *k* factors, *m* countries, and *n* goods. We will use the single superscript associated with a vector to indicate a country, the double superscripts *hf* following a matrix or its elements to indicate a transaction from country *h* to country *f*, and the double subscripts *ij* of the elements of matrix to indicate a transaction from sector *i* to sector *j*.

The *k*-factors, *m*-countries, and *n*-goods demand-oriented trade model can be presented as

Price function:	$p=(I-A^T)^{-1}B^T w$	(53)
Trade function:	$y = Cu$	(54)
Production Resource Constraint:	$v = Bx$	(55)
Production-supply function:	$X = Ax + y$	(56)
Demand-Oriented Factor Requirement	$v = B(1-A)^{-1}Cu$	(57)

where

$$x=\begin{bmatrix} x^1 \\ x^2 \\ \vdots \\ x^m \end{bmatrix}, \quad y=\begin{bmatrix} y^1 \\ y^2 \\ \vdots \\ y^m \end{bmatrix}, \quad u=\begin{bmatrix} u^1 \\ u^2 \\ \vdots \\ u^m \end{bmatrix}, \quad w=\begin{bmatrix} w^1 \\ w^2 \\ \vdots \\ w^m \end{bmatrix}, \quad p=\begin{bmatrix} p^1 \\ p^2 \\ \vdots \\ p^m \end{bmatrix}, \quad v=\begin{bmatrix} v^1 \\ v^2 \\ \vdots \\ v^m \end{bmatrix}$$

$$A=\begin{bmatrix} A^{11} & A^{12} & \cdots & A^{1m} \\ A^{21} & A^{22} & & \vdots \\ \vdots & & \ddots & \\ A^{m1} & \cdots & & A^{mm} \end{bmatrix}, \quad B=\begin{bmatrix} B^{11} & B^{12} & \cdots & B^{1m} \\ B^{21} & B^{22} & & \vdots \\ \vdots & & \ddots & \\ B^{m1} & \cdots & & B^{mm} \end{bmatrix}, \quad C=\begin{bmatrix} C^{11} & C^{12} & \cdots & C^{1m} \\ C^{21} & C^{22} & & \vdots \\ \vdots & & \ddots & \\ C^{m1} & \cdots & & C^{mm} \end{bmatrix}$$

x is the [(n x m) x 1] vector of outputs for all countries of the integrated system;
p is the](n x m) x 1] vector of prices for all countries;
y is the [(n x m) x 1] vector of supply of final goods for all countries;
u is the [(n x m) x 1] vector of demand for all counties;
w^h is the [(m x k) x 1] vector of factor prices for all countries;
v^h is the [(m x k) x 1] vector of factors for all countries;
A is the [(n x m) (n x m)] technology coefficient matrix of intermediate inputs for all countries;
B is the [(m x k) (n x m)] technology coefficient matrix of the primary factors for the system;
C is the [(n x m) (n x m)] import coefficient matrix of demand of the system;
x^h is the (n x 1) vector of outputs in country h; h=1,2,…,m;
p^h is the (n x 1) vector of prices in country h;
y^h is the (n x 1) vector of supply of final goods in country h;
u^h is the (n x 1) vector of demand in country h;
w^h is the (k x 1) vector of factor prices in country h;
v^h is the (k x 1) vector of factors in country h;
A^{hf} is the (n x n) coefficient matrix of intermediate input transacted from country h to country f; its typical element a_{ij}^{hf} denotes the amount of input of good i in country h to sector j in country f per the amount of output of good j in country f; h,f are indicators of countries, h,f =1,2, ..., m; i,j are indicators of goods, i,j =1,2, …, n;
C^{hf} is the (n x n) coefficient matrix of final goods transacted from country h to country f , it is a diagonal matrix, its typical element c_{ii}^{hf} denotes the amount of good i consumed in country f made in country h per demand of the good in country f;
B^{hf} is the (k x n) is coefficient matrix of factor inputs transacted from country h to country f, its typical element b_{sj}^{hf} denotes the amount of input of factor s from country h to sector j in country f per the amount of output j in country f; s is the indicator of factor; s=1,2,…,k;
I is a identity matrix.

All dimensions in the above models are consistent. The structure of the model is flexible to hold multi-factor, multi-country, and multi-commodity. When the number of factors equals the number of commodities, it is the so-called "even number" model in the literature. In the real world, the number of commodities is much more than the number of factors; the "even number" assumption is hard to hold. The model proposed in this section provides a new approach to establish "uneven number" equilibrium of factors and commodities among multi-country economies.

The transportation costs and non-tradable goods are other realistic considerations in international trade. We may set up either transportation or

non-tradable good as a sector to reflect their roles in the model. The characteristic of these two sectors or goods is that they do not take part on international trade activities directly but take part of intermediate input activities and primary factor input activities.

MEASUREMENT OF FACTOR ABUNDANCE

To measure the factor abundance of a country in the real world, we propose the following criterion equation, based on the demand-oriented trade model, as

$$r=B(I-A)^{-1}(y-u) \tag{58}$$

where r is the $[(m \times k) \times 1]$ vector of computed factor content of net exports of the world.

The vector of supply minus the vector of demand, $(y-u)$, equals the vector of net export for all countries. The matrix $B(I-A)^{-1}$ indicates total factor requirements. Vector r is total factor content of net export.

If a country's i's computed factor content of trade is greater than zero, i.e. $r_i^h>0$, then we say that the country is abundant in that factor, because the country "exports" the factor as the result of exporting goods intensive in the factor. If a country's i's computed factor content of trade is less than zero, i.e. $r_i^h<0$, then we say that the country is scare in that factor.

Criteria r is a plain computation of factor content of net export. It allows different technologies, intermediate input, real consumption, real exports, and real imports. It may give a new clue to study the Leontief test. Equation (58) is different from Vanek (1968)'s equation, which assumed proportional consumption of each country and identical technology.

CONCLUSION

This paper introduces the demand-oriented trade model, a comprehensive international trade model, which reflects some realistic considerations in international trade practice, including intermediate input,

mobile factors, intra-industry trade, taste differences, and technology differences. It demonstrates how the production of output, resource allocation, and supply of a country are impacted by the demands of other countries.

The demand-oriented trade model implies that the production and supply of a country is structurally depended on and oriented both by its domestic demand and by international demand. The equilibrium of international economies is the demand-supply equilibrium of all countries involved; the free trade will satisfy the consumption taste maximally for each of the countries; the multi-national demand-oriented development can benefit all countries.

The paper has provided an approach to process the trade-based and demand-oriented analysis in international economies. The five equilibriums of multi-national economies included in the demand-oriented trade model are general structure expressions in international trade. They do exist both in the Ricardo model and in the Heckscher-Ohlin model. The higher dimension model of the demand-oriented trade model of this paper can present the "uneven number" scenario very well.

The model presented in this paper can be a policy simulation tool to process various analyses of trade, once the data in the account matrix of international trade are collected.

The most difficult data to be collected in the model is the data of the technological coefficient matrix A; which is a world input output matrix. It may be simplified by assuming that there are no international intermediate requirements in the analyses, i.e. A^{hf}=0 for h not equal to f.

APPENDIX A

Transporting two sides of equation (24) yield,

$$p^T = w^T B(I-A)^{-1} \tag{A-1}$$

Substituting it into (25) yields

$$w^T B(I-A)^{-1} y = w^T v \tag{A-2}$$

Substituting equation (16) into it yields

$$v^T B(I-A)^{-1}y = v^T B(I-A)^{-1}y \tag{A-3}$$

APPENDIX B

The substitution of equation (27) into equation (28) yields:

$$B(I-A)^{-1}C(\tilde{u})l = v \tag{B-1}$$

Because

$$C(\tilde{u})l = Yl = y \tag{B-2}$$

The substitution of it into (B-1) yields,

$$B(I-A)^{-1}y = v \tag{B-3}$$

This is just equation (16).

APPENDIX C

The substitutions of equation (27) into equation (29) yield

$$w^T B(I-A)^{-1}Y = p^T Y \tag{C-1}$$

It can be reduced to

$$w^T B(I-A)^{-1} = p^T \tag{C-2}$$

The transportation of it yields

$$(I-A^T)^{-1}B^T w = p \tag{C-3}$$

It is just equation (24).

APPENDIX D

If $C = I$ and $u = y$, equation (27) can be written as

$$Z = B(I - A)^{-1}\bar{y} \tag{D-1}$$

Because

$$V = B\bar{x} \tag{D-2}$$

and because

$$\bar{x} = (I - A)^{-1}\bar{y} \tag{D-3}$$

so that

$$V = Z \tag{D-4}$$

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IS THE IMPACT OF FOREIGN LOANS ON THE ECONOMIC GROWTH OF SEVERELY- INDEBTED UNDERDEVELOPED COUNTRIES A MYTH OR REALITY? CORROBORATIVE EVIDENCE

Morsheda Hassan, Grambling State University
Abdalla Hagen, Grambling State University
Mahmoud Haj, Grambling State University

ABSTRACT

This study investigates the impact of foreign loans on the economic growth of 82 severely- indebted underdeveloped countries over a ten-year period (1991-2001). The findings of this study revealed that foreign debt has a negative and insignificant impact on the economic growth of the surveyed countries. Although debt cancellation may be less effective in the long term, we still concur with the proposals for debt cancellations suggested by the report of Jubilee research at the new economics foundation by (Greenhill & Blackmore, 2002).

INTRODUCTION

The effect of foreign loans on economic development of underdeveloped countries is still questionable and debatable. It has been proposed that if an underdeveloped country seeks an economic growth and welfare for its people, the principal mechanism to do so is to try to have foreign loans. Although there are other factors that affect economic growth, this simple proposition still claims that foreign loans are a necessary ingredient. While

foreign loans can have both negative as well as positive consequences, the positive benefits outweigh the negative on balance, and hence the policy and strategy should be to maximize the positive effects and minimize the negative ones (Villami & Asiedu, 2001).

On the contrary, Roll and Talbott (2002) attested that foreign loans don't contribute toward financing sustained economic growth over the long term. Similarly, Tandon (2002) and Hausmann and Fernández-Arias (2000) discovered that foreign loans are falsely marketed to the developing countries as a solution to their underdevelopment. They did not find correlation between foreign loans and economic growth, or between foreign loans and development.

Khor (1999) revealed that about 80 of underdeveloped countries (the majority of them are in Africa and Latin America) fell into a debt trap and under the sway of the World Bank (WB) and the International Monetary Fund (IMF). According to (WB, 2001), the number of severely indebted countries is about 88. Of the 88 severely indebted countries, the WB and key governments classified 41 countries as highly indebted poor countries (HIPCs).

Hagen, Keleta, Ghebreyesus and Cadet (2004) found that foreign loans of HIPCs have a negative and insignificant impact on the economic growth of HIPCs. This study extended the above study and investigated the impact of foreign loans on the economic growth of 82 severely indebted countries over a ten-year period (1990-2000).

ORIGINS OF FOREIGN LOANS CRISIS

The seeds of the debt crisis in poor, underdeveloped countries were sown in the 1960's when many governments of those countries pursued industrialization policies that were heavily dependent on imports. At the same time, many underdeveloped countries developed policies that lead production of export crops to fall, creating a gap between imports and exports. To fill this gap, they borrowed money from abroad and by the 1970's they were verging on crisis (Khor, 1999). The crisis deepened during the 1970's with dramatic oil price hikes and associated high interest rates causing a global recession. Creditors lending for political reasons compounded the problem in some countries. (IMF, 2002).

Consequently, the growth of the debt crisis meant that most underdeveloped countries' governments had to turn to the lenders of last resort for help with new loans to meet the finance payments on their original loans and to cover budget and trade deficits. Thus, these two institutions now wield considerable power in many poor countries (Joyner, 1998).

By the late 1980's debt stocks were still rising in poor countries. Unpaid interest and the unpaid portion of loans were simply added to the remainder of loans as arrears. The result was that arrears grew at a massive rate. For instance, between 1990 and 1993 Mozambique could only afford to pay 10% of what it was supposed to pay and the balance, almost $US600 million, was added to its growing debt stock. Eventually, creditors began to take steps to tackle the problem of unpaid debt and developed a series of ad hoc measures that were supposed to provide a necessary solution (European Network on Debt and Development, 2000).

Loans from the IMF and the WB have, in many cases, worsened poverty and widened inequalities (Joyner, 1998). These loans come with conditions set out under the terms of Structural Adjustment Programmes (SAPs), which most countries have been obliged to adopt. Under the Programmes, governments must agree to reform the management of their economies and to increase their debt servicing, with loan conditions often including reducing the size of government and government spending, currency devaluation and increased openness to foreign investment (IMF, 2001; 2002).

In making the often drastic cuts to public spending required by SAP's, social services are usually the first to suffer through cuts to national education and health budgets, reducing access to these basic services for poor households, and exacerbating poverty. The impact of debt often also extends beyond the household. Pressured to earn foreign exchange to service debts, some governments are encouraging large scale extractive projects such as mining and logging, often at the expense of the environment and the rights of local people to control the use of their lands.

The problems can also become mutually reinforcing at a global level. For example, with many underdeveloped countries relying on the production of cash crops such as coffee and cocoa for export, too much can be grown, resulting in crops flooding the world market and pushing prices down (Oxfam International, 2002). Underdeveloped countries have seen considerable business cycles in recent decades. At the same time they have significantly increased their external-debt-to-GDP ratios. It seems natural to suspect that increased indebtedness and the amplified cycles are linked (Leung, 2003).

The problems facing severely indebted countries to the WB and the IMF were particularly acute. Countries had to repay debts in full or face suspension of assistance programs and a cut-off in aid from other donors. Although both institutions denied that their debt represented a real problem, the facts spoke for themselves; debt to the WB and the IMF increased from 20% of the total debt stock of heavily indebted poor countries in 1980 to 50% of total debt stock in 1994

(George, 2001). In the end, the WB, IMF and the industrialized countries (G7) recognized the severity of the debt problem and started working on proposals and solutions, however, many economists questioned these proposals, and the results of these efforts are yet to be seen.

DEBT RELIEF

According to Easterly (2001), debt relief has become the feel-good economic policy of the new millennium. But despite its overwhelming popularity among policymakers and the public, debt relief is a bad deal for the indebted countries. By transferring scarce resources to corrupt governments with proven track records of misusing aid, debt forgiveness might only aggravate poverty among the world's most vulnerable populations. The lesson of structural adjustment programs is that reforms imposed from the outside do not change behavior. It would be better for the international financial institutions to simply offer advice to governments that ask for it, and wait for individual countries to come forward with homegrown reform programs, financing only the most promising ones and disengaging from the rest. This approach has worked in promoting economic reform in countries such as China, India, and Uganda. Rushing through debt forgiveness and imposing complex reforms from the outside is as doomed to failure as earlier rounds of debt relief and adjustment loans.

As long ago as 1967, the U.N. Conference on Trade and Development argued that debt service payments in many poor nations had reached "critical situations." A decade later, official bilateral creditors wrote off $6 billion in debt to 45 poor countries. In 1984, a World Bank report on Africa suggested that financial support packages for countries in that region should include "multiyear debt relief and longer grace periods." Since 1987, successive G-7 summits have offered increasingly lenient terms, such as postponement of repayment deadlines on debts owed by indebted poor countries.

In the late 1980s and 1990s, the World Bank and IMF began offering special loan programs to African nations, essentially allowing governments to pay back high-interest loans with low-interest loans, just as real a form of debt relief as partial forgiveness of the loans. The World Bank and IMF's more recent and well-publicized highly indebted poor countries (HIPCs) debt relief program therefore represents a deepening of earlier efforts to reduce the debt burdens of the world's poorest nations. Remarkably, the HIPCs nations kept borrowing enough new funds in the 1980s and 1990s to more than offset the past debt relief. From 1989 to 1997,

debt forgiveness for the 41 nations, now designated as HIPCs, reached $33 billion while new borrowing for the same countries totaled $41 billion.

The HIPCs' initiative failed for three reasons: (1) It provides too little debt relief. The debt relief provided is not deep enough and does not address the burden of debt servicing on national budgets in HIPCs. Under HIPCs' initiative, sustainable debt servicing absorbs up to 40% of national revenue while millions of their people are denied education or health care. (2) The initiative came too late. Countries entering HIPCs must complete two successive SAPs of IMF for six years before qualifying for debt relief. This eligibility requirement leads to serious delays in providing debt relief through HIPC. (3) The initiative has little, if any, impact on poverty reduction. There is no link to poverty reduction and the HIPCs' initiative; it has been designed to serve the needs of creditors, rather than the needs of these poor countries. The initiative of HIPCs failed to provide sufficient resources to address the poverty reduction and human development needs of poor countries, and to provide progress on achieving international development targets were agreed upon (Cohen, 2000; Dagdeviren, 2001).

So by the time the Jubilee's 2000 movement began spreading its debt relief gospel in the late 1990s, a wide constituency for alleviating poor nations' debt already existed. However, Jubilee 2000 and other pro-debt relief groups succeeded in raising the visibility and popularity of the issue to unprecedented heights. According to Easterly (2001), debt relief has become the feel-good economic policy of the new millennium. But despite its overwhelming popularity among policymakers and the public, debt relief is a bad deal for the indebted poor countries.

THE DEVELOPMENT OF AN AD HOC ECONOMIC MODEL

The neoclassical growth model (Solow, 1956; Denison, 1961) proposed that capital accumulation and technological progress is the engine of economic growth. However, this neoclassical exogenous growth model rejected the impact of another alternative approach for studying economic growth is to view it as an endogenous growth model of several internal factors (Lucas, 1988; Romer, 1986).

Levine and Renelt (1992) and Harms and Ursprung (2002) asserted that there is no universal model of economic growth accepted by all researchers. We have developed an ad hoc model including basic determinants of economic growth as follows: GDP growth (gross domestic product)= ¦(foreign loans, foreign aid, foreign direct investment, human capital, growth rate of labor force, growth rate of population, government spending, openness to international trade, trade openness

indicator, economic freedom, business climate, inflation, political regime (political rights and civil liberties)).

These variables drawn from the literature are by no means exhaustive. We examined the relationship between the independent variable and the dependent variable after controlling for cyclical fluctuations and unusual changes in the GDP of each country. We controlled this factor by creating a sample covering the 10-year period. The average of ten years would eliminate any cyclical fluctuations in the GDPs. Therefore, we have included certain factors that influence economic growth and investigated the impact of foreign loans on economic growth in 82 severely indebted countries.

RESEARCH METHODS

Research methods include sample, data collection, and measurements of variables. Each component was implemented according to the following procedure.

Sample and Data Collection

Data collection consisted of annual data pertaining to a cross-section of 82 severely indebted countries, from the1991 to 2001 period. The purpose of selecting this period of time is to include a consistent set of recent data. Required data were collected from various resources including Greenhill and Blackmore , 2002, WB (1991-2001); UN reports from 1991 to 2001; International Monetary Fund (IMF) from1990-2001; UN Development Programmes, 2001 and previous reports; Political Risk Services, 1997and previous issues and Harms, 2000; Freedom House, 2001 and previous issues; Gwatney et al., 2002; and World Bank's (2002) Global Development Finance report and previous reports.

Measurement of Variables

The dependent variable is the average of the economic growth for the years 1990-2000, measured by per capita GDP. To control for country size, we divided the total volume of foreign Loans, foreign direct investment, and foreign aid by the population size of each country. To be sure that the results are not just due to the omission of other determinants of GDP, we introduced a number of control variables that are believed to have a significant effect on GDP growth.

Control variables included in this study are: foreign aid, foreign direct investment, human capital, growth rate of population, growth rate of labor force,

government spending, openness to international trade, trade openness indicator, economic freedom, inflation, business climate, political regime (political rights and civil liberties), and political risk.

Dependent variable

Economic growth was measured by the average of the natural log of GDPs of each included country from 1991 to 2001(WB, 2002; UN, 2002; Gwartney et al, 2003).

Independent variable

Foreign loans were measured by the natural log of the average total foreign loans for ten years (1991-2001) of each 82 underdeveloped countries (WB, 2002; UN, 2002; IMF, 2002; Greenhill & Blackmore, 2002).

Control variables

Foreign aid was measured by the natural log of the average of foreign aid received by each recipient country from 1991 to 2001 (World Bank, 2002; UN, 2002).

Foreign direct investment (in U.S. dollars per capita) was measured by the natural log of the average of FDI received by each recipient country from 1990 to 2000. (World Bank, 2001; IMF, 2001).

Human capital was measured by the average of adult literacy rates in each country for 1991, 1995, and 2001 (UN, 2002; UNESCO, 2002).

Growth rate of labor force was measured by the average of the growth rates of the labor force of each country from 1991 to 2001 (UN Development Programme, 2002).

Growth rate of population was measured by the average of growth rates of population in each included country from 1991 to 2001 (UN, 2002; World Development Report, 2002).

Government spending was measured by the average of net spending on defense and education as a percentage of GDP for each government of every country from 1991 to 2001 (UN, 2002).

Openness to international trade (reflects the existence of administrative trade openness and barriers to trade) was measured by the average of the ratios of exports

plus imports to GNP population in each country from 1991 to 2001 (World Bank, 2002; Gwartney et al, 2002; scale 0-10, where number 10 is the maximal openness).

Trade openness indicator (reflects the existence of tariff rates and protection, restrictions to capital movements, black market exchange premium, deviations of the actual size of trade sector from the expected size, and other distortions) was measured by the average of values of trade openness indicator for 1991-1993 and 1994-2001 (Gwartney et al, 2002; scale 0-10, where number 10 is the maximal openness).

Economic freedom was measured by index of economic freedom assembled by Gwartney et al. (2002). The average of values of economic freedom for 1991 and 1995, 1995-1997, and 2001 was used because it is not available on an annual basis (Scale 0-10, where 10 is the maximum economic freedom).

Business climate (quality of business environment) was measured by the average of corruption in government, the quality of the bureaucracy, and a country's law-and-order tradition for each country from 1991 to 2001. (Political Risk Services, 2002and previous issues; scale 0-18, where 18 is the optimal business climate)

Inflation in underdeveloped countries was measured by the average inflation rates in each included country from 1991 and 2001 (IMF, 2002).

Political Regime:

a. Political rights (people's ability to participate freely in the political process) were measured by the average of Gastil index from 1991 to 2001 (Freedom House, 2002 and previous issues; scale 1-7; represents the maximum political repression).
b. Civil liberties (freedom to develop views, institutions, and personal autonomy apart from the state) were measured by the average of Gastil index from 1991 to 2001 (Freedom House, 2002 and previous issues; scale 1-7; represents the maximum civil repression).

No political risk was measured by the average of "expropriations, exchange controls, and default on government contracts" in each country from 1991 to 2001 (Political Risk Services, 1997 and previous issues and Harms, 2001, Scale 0-30, where 30 minimal risk).

DATA ANALYSES

Regression analysis is an appropriate statistical tool and is widely used by researchers investigating relationships of a behavioral and/or economic nature. Regression estimates the relationship concerning independent variables by

explaining the variations in the dependent variables (Pindyck and Rubinfeld, 1998). We utilized the multiple regression technique in order to estimate the relationship between the independent variables and the dependent variable.

Thus the regression model is: y = a + b1x1 + b2x2 + b3x3 .....+ b14x14 + e

Where:

Y= GDP per capita
X1= Foreign loans (debt)
X2= Foreign aids
X3= Foreign direct investments
X4= Human capital
X5= Growth rate of labor force
X6= Growth rate of population
X7= Government spending
X8= Openness to international trade
X9= Trade openness indicator
X10= Economic freedom
X11= Business climate
X12= Inflation
X13= Political regime:
a. political rights
b. civil rights
X14= political risk (reverse)
b1, b2,....,b14= estimated regression coefficients
a = constant
e = error term

However, potential problems such as multicollinearity, hetroscedasticity, autocorrelation, outliers, non-linear relationship, and the goodness-of-fit of the overall regression model are potential issues that may confront the regression model. In addition, the data may lack the assumption of normal distribution. The existence of such problems leads to inaccurate results and misleading conclusions and implications (Pindyck & Rubinfeld, 1998).

FINDING OF THE STUDY

To ensure that the multiple regression model has not been undermined by any potential problem, certain statistical tests have been used to check the existence

of any problems. Multicollinearity is not a problem because all variance inflation factors (VIFs) are low. Autocorrelation does not exist because the Durbin-Watson statistic is significant (D.W.= 4.16). The plot of the residuals shows that there is no evidence of heterosedasticity. Neither the Studentized Deleted Residuals Test identified influential outliers for the dependent variable, nor Diffits and the Cook's Test detected influential outliers for the independent variables. The plotted histogram of data depicted normal distribution of the data. The plot of the dependent variable against each of the independent variables showed a linear relationship between these perspective variables. The results of the multiple regressions are presented in Table 1. The significant F (F-value= 12.65; P= .001) confirms a complete goodness-of-fit for the overall regression model.

Data analysis in Table 1 reveals that f*oreign loans (debts)* do not have a direct influence on economic growth. Although this factor has a negative effect, it is not significantly different from zero. This finding supports Mishra, Mody, and Murshid's (2001) notion casting doubts on the ability of foreign capital inflows (including foreign loans) to stimulate long-run growth in underdeveloped economies. Even when many underdeveloped countries are in favor of capital inflows, Hausmann and Fernández-Arias (2000) asserted that they view international debt flows (especially of the short-term variety) as bad cholesterol. Schaefer and Schavey (2002) also revealed that the International Financial Institution Advisory Commission (known as the Meltzer Commission) urged underdeveloped countries to stop making loans that later crush their recipients under heavy debt. The commission urged rich countries to give underdeveloped countries grants conditional on their adopting economic policies likely to bring fiscal success.

This finding also supports those of Bosworth and Collins (1999) who provided evidence on the effect of capital inflows on the economic growth of 58 underdeveloped countries between 1978 and 1995. The sample covered nearly all of Latin America and Asia, as well as many countries in Africa. The authors distinguished among three types of inflows (foreign direct investment, portfolio investment, and international banks loans). The authors found that the impact of loans on the economic growth fell below the other two. Dadush, Dasgupta and Ratha (2000), Lipsey (2001) and Loungani and Razin (2001) found similar results.

Table 1: Multiple Regression Results Concerning the Impact of Foreign Loans on the Economic Growth of Highly Indebted Poor Countries

Independent Variables	Dependent Variable: Economic Growth Variables		
	Coefficient	T-value	Sig. level
Foreign loans	-.0475	1.18	.48
Control Variables			
Foreign aid	-.0475	1.13	.39
Foreign direct investments	.6825	3.27	.05
Human capital	.1582	1.68	.10
Growth rate of population	.1422	1.59	.10
Growth rate of labor force	.7120	2.75	.05
Government spending	-.1417	-2.14	.05
Openness to international trade	.0224	1.28	.48
Trade openness indicator	.0546	1.22	.42
Economic freedom	.0578	1.08	.54
Business Climate	.0611	1.14	.42
Inflation	-.0648	-2.16	.05
Political regime:			
a. political rights	.1022	1.28	.27
b. civil rights	.1014	1.25	.32
No political risk	.1523	1.72	.10
R Square= .57; Adjusted R Square= .51 F= 12.65; Significant F= .001; D.W.= 4.16			

With respect to traditional control variables, f*oreign aid* does not have a direct influence on the economic growth of indebted underdeveloped countries. Although this factor has a negative effect, it is not significantly

different from zero. This finding supports those of previous studies (e.g., Griffin & Enos, 1970; Clad & Stone, 1993; Islam, 1992; Johnson & Schaefe, 1997; Villamil & Asiedu, 2001; and Boone, 2002). This finding also supports Johnson and Schaefe (1997) who found that the majority of the long-term recipients of foreign aid over 29 years (1965-1994) had achieved very low levels (1%) of economic growth.

According to Schaefer and Schavey (2002), foreign aid and all efforts of existing institutions and structures have failed to solve the problem of underdevelopment. For example, the United States has spent more than $500 billion over the last 50 years on foreign assistance, yet standards of living have fallen in many underdeveloped countries during that time. Zambia, for instance, has received more than $1 billion in foreign aid since 1964, yet its per capita income has dropped from $664, then to $338 in 2000 (Schaefer & Schavey, 2002).

Even the United States' Agency for International Development itself admits that only a handful of countries that started receiving assistance in the 1950s and 1960s never graduated from dependent status. Despite massive amounts of international aid, the average annual increase in per capita GNP has declined steadily in underdeveloped countries since the 1960s, with many of the underdeveloped countries heaviest foreign aid recipients actually suffering negative economic growth.

In contrast, FDI has a positive and a significant effect on the economic growth of the selected indebted underdeveloped countries. This finding supports those of recent studies (e.g., Dadush, Dasgupta, & Ratha, 2000; Feldstein, 2000; Lipsey, 2001; and Loungani & Razin, 2001). This finding also supports the assertion of Aitken and Harrison (1999) who demonstrated that FDI increases productivity, which in turn promotes growth. But these authors confirm conditions (e.g., skilled labor force, well-developed structures, etc.) under which productivity benefits accrue. For example, Lipsey (2001) claimed that FDI boosted productivity in Malaysia, Taiwan, and the southern provinces of China. In contrast, similar benefits were not found in Morocco, Tunisia, and Uruguay. Moreover, firms with greater research and development in underdeveloped countries were able to absorb the FDI benefits.

Human capital (represented by the proxy of adult literacy) has a positive and significant effect on economic growth, which suggests a strong positive link between investment in education and economic growth. Education enhances productivity and promotes higher economic growth. This finding supports Borensztein, Gregorio and Lee (1998) who asserted that FDI is more productive in countries with a better-educated labor force.

Growth rate of labor force has a positive and marginal significant effect on economic growth. According to the neoclassical growth theory, labor force growth should have a positive effect on economic growth rate. Economic growth can be sustained through macroeconomic growth policies that curb inflation, high exchange rate of currency and improper government spending. Thus, the government should initiate economic reforms and must fulfill its commitment to improve the quality of the labor force by focusing on the people's education and training programs (Kormendi & Meguire, 1985).

Growth rate of population has a positive and marginal significant impact contradicting recent findings on the relationship between fertility and economic growth. It is important to note that bigger families with many children are part of the culture of underdeveloped countries. The marginal significant coefficient of population growth indicates that either capital accumulation or labor force growth does not keep pace with population growth.

This is why Chaliand (2002) suggests that no study of underdeveloped countries could hope to assess its future prospects without taking into account population growth. In 1980, the earth's population was estimated at 4.4 billion, 72 percent of it in underdeveloped countries, and it did reach 6.2 billion at the close of the century, where 80 percent of it was in underdeveloped countries. This population explosion in the third world will surely prevent any substantial improvements in their living standards and threaten people in stagnant economies with worsening poverty.

Government spending of underdeveloped countries has negative and insignificant effects on economic growth. When we run the regression without the political freedom variable, government spending variable shows a large negative magnitude on economic growth. One possible reason is that governments lacking freedom feel insecure and spend more resources in

order to stabilize their regimes rather than promoting productivity and hence economic growth.

In terms of openness to international trade and trade openness indicator, each finding reveals that openness to international trade and trade openness indicator has the expected positive effects although they are insignificant. It appears that trade in underdeveloped countries is not integrated with the world economy. Both findings support that of Johnson (1997) who found that most recipients of American foreign aid had the highest barriers to trade in the world. In Johnson's (1997) Index of Economic Freedom survey, 69 of 109 underdeveloped countries receiving capital inflows had high or very high marks for their levels of trade protectionism in the world. Trade restrictions are typically expected to have deleterious effects on economic growth due to the inability to exploit comparative advantages. On the contrary, countries open to international trade, like Australia, Canada, most of the European Union (EU), Japan, Hong Kong, and New Zealand, had either very low or low levels of protectionism.

The insignificant relationship between economic freedom and GDP suggests that if underdeveloped countries want to achieve growth, they must embrace economic freedom. That is, countries having high economic freedom achieve much higher per capita incomes. Conversely, countries lacking economic freedom do not experience sustained growth no matter how much assistance they receive. According to the economists Roll and Talbott (2002), such countries could not afford to clean their environment or raise labor standards. Lower tariffs, smaller barriers to foreign investment, and limited regulatory burdens account for as much as 80 percent of the difference in per-capita income between rich and poor countries.

Business climate has no significant effect on economic growth. This finding indicates that many underdeveloped countries are not providing a complete and healthy business environment for foreign investors. This means that corruption in some governments, complex bureaucracy, and the lack of law and order are deterring foreign investments. This finding supports Harms and Ursprung (2002), who attested that a healthy business climate enhances FDI, which in turn boosts economic growth in underdeveloped countries.

As we expected, inflation has a negative impact on economic growth. It is safe to conclude that inflation deters FDI from investing in underdeveloped countries suffering high inflation. This finding supports the notion that macroeconomic mismanagement lowers aggregate productivity and deters foreign investors. This finding supports those of Harms and Ursprung (2002).

With respect to the political regime (political rights and civil rights) in underdeveloped countries, free-political underdeveloped countries or partly free underdeveloped countries have a higher growth rate than those who are not free. This result tends to support those of Helliwell (1994) who claimed that mature democracies likely suffer a slow-down in growth because of a slow buildup in the powers of special interest groups whose successful claims for special treatment reduce the growth of the economy as a whole. In contrast, countries without political freedom have very low economic growth. A plausible reason is that when governments (particularly in Africa) are confronted with revolutions and military coups, economic plans are usually disrupted, forcing countries into both vicious circles and backward economic processes.

Finally, political risk is based on the International Country Risk Guide of the likelihood of expropriation, exchange control, and default on host government contracts. The marginal significant negative relationship between this variable and growth suggests the existence of this political risk, to certain extent, in a large number of these underdeveloped countries.

CONCLUSIONS

By the dawn of the 21st century, after 30 years of development strategies that were designed in Washington, New York, London, Frankfurt, Paris, and Tokyo, and trillions of dollars in foreign loans, aid, and investment, more than half of the world's population still finds daily life a struggle. And despite years of rhetoric about debt relief and dozens of structural adjustment plans, the real value of underdeveloped countries debt has continued to grow, to more than $2.5 trillion.

Irresponsible over-lending, poorly conceived projects and privatizations, phony back-to-back loans, outright looting of central-bank

reserves, and massive capital flight continued right under the noses of Western bankers and government officials who were in a position to do something about the problems, but chose not to.

How did 30 years of greatly expanded international lending, investment, aid, and development efforts end up producing such a fiasco? Where did all that money actually go? The 1980s debt crisis became visible as early as August 1982, when Mexico, Argentina, and 26 other countries suddenly rescheduled their debts at once. Our disappointments with globalization have been a popular subject for economists and development policy-makers at least since the Mexico crunch of January 1995, as amplified by the East Asian and Russian crises in 1997-98, and in Turkey, Ecuador, Bolivia, Argentina, Venezuela, and other countries since then.

The majority of severely indebted countries being African and Latin American fell into a debt trap and under the sway of the IMF and World Bank. Many poor underdeveloped countries could not keep up with their interest payments, let alone ever hope to pay back the principal on their foreign debts.

RECOMMENDATIONS

There are no good or bad foreign loans outside of national policy. In other words, it is only in relation to national policy that foreign loans can be described as good or bad. All foreign loans are inherently problematic. Such loans have not been given as a matter of charity; they were given to make profits. Hence, there should be no "open-door" policy towards foreign loans in general. It must be allowed in as and when required by national consensus between the government, the local private sector, the workers and small farmers, and other organs of civil society. Foreign loans must operate under certain nationally determined conditions and must conform to certain performance requirements.

In devising a future policy for foreign loans, a country has to remember the brutal fact that the loans (whether obtained by the public or private sector) have to be repaid, with interest, in the specified time frame, and in the foreign currency denominated. This can be done only if the

borrower has invested the foreign loan in a project or activity that yields net revenue sufficient to service the debt.

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APPENDIX I
DEFINITION OF TERMS

The Gross Domestic Product (GDP) is total annual value of final goods and services in U.S. dollar at the official exchange rate.

GDP per capita at Purchasing Power Party (PPP): It is based on the World Bank estimate of the buying power of local currency. The GDP at PPP is estimated to be three or more times the normal GDP at exchange rate parity.

The Gross National Product (GNP) is the total annual market value of goods and services produced by all citizens, wherever they happen to be working, and capital as a measure of the economy's performance during the year.

Total Debt: this is the amount of money a country owes. It is the amount of money stated in the contracts, plus all accumulated arrears.

Arrears are unpaid interest and principle repayments not made on schedule, and added to the total debt.

Debt service due is the sum of interest and principal payments due right now.

Debt service percentages are the debt service due and paid as percentage of GDP and exports are used as a measure of credit worthiness.

APPENDIX II
COUNTRIES INCLUDED IN THE STUDY

Algeria, Angola, Argentina, Bangladesh, Belize, Benin, Bolivia, Botswana, Brazil, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Chile, Columbia, Congo, Costa Rica, Dominican Republic, Ecuador, Egypt, El-Salvador, Ethiopia, Fiji, Gabon, Gambia, Ghana, Guatemala, Guinea-Bissau, Haiti, Honduras, India, Indonesia, Iraq, Ivory Coast, Jamaica, Jordan, Kenya, Lesotho, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Morocco, Mozambique, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Rwanda, Senegal, Sierra Leon, Somalia, South Africa, Sri Lanka, Sudan, Syria, Tanzania, Thailand, Togo, Trinidad & Tobago, Tunisia, Turkey, Uganda, Uruguay, Venezuela, Zaire, Zambia, and Zimbabwe.

ECONOMIC DEVELOPMENT INITIATIVES OF AFRICAN-AMERICAN CHURCHES IN TREME: THE OLDEST AFRICAN-AMERICAN NEIGHBORHOOD IN THE UNITED STATES

Kenneth J. Lacho, University of New Orleans
Tammy Parker, University of Louisiana at Monroe
Kristie Carter, Carter Memorial Rehabilitation Center, Inc.

ABSTRACT

The economic condition of inner cities in the United States is one of the most important issues facing us as a nation. The inner city is now a frontier of growth and entrepreneurship. One influence in promoting economic development in the inner-city is the African-American church. This study examines the nature and extent of economic development activities of African-American churches in Treme an inner-city neighborhood in New Orleans, Louisiana. Treme is black, low income, 71% rental and is the oldest African-American neighborhood in the U.S. dating back to the early 1800s. Six of 16 churches in Treme were studied. Churches were more likely to take part in social service activities than entrepreneurial activities (job training, housing, supporting small business start-ups). Two churches (both Catholic) followed different approaches to economic development. St. Peter Claver targets a weakness in Treme, housing and lack of home ownership. St. Augustine's efforts are directed towards tourism and related cottage industries. This strategy plays to Treme's history and the growth of cultural tourism. Further study should be oriented toward church strategy used given the strength and weaknesses of congregations in light of community threats and opportunities.

INTRODUCTION

The economic condition of inner cities in the United States is one of the most important issues facing us as a nation. The lack of business, jobs, and private investment in these disadvantaged urban areas not only perpetuates poverty, but also contributes to other social problems such as crime and drug abuse. (Porter, 1995).

Largely abandoned during an era of industrial restructuring, the inner city is now a frontier of business growth and entrepreneurship. From Harlem in New York City to Los Angeles, blighted inner cities have begun to improve (McNatt, September 20, 2004). According to a recent study by the Initiative for a Competitive Inner City (ICIC), ghettos and surrounding neighborhoods actually outpaced the U.S. as a whole in such factors as median household income increases, poverty rate decline, home ownership, and high school graduates (Bernstein, Pameria, & Crocket, 2003). Growth in the inner city and a major market potential reflect renewed interest by the public sector, bankers and developers, large corporations, and the influx of young professionals. Despite the improving picture, too many inner city neighborhoods remain untouched.

Another influence in promoting economic growth and entrepreneurship in the inner city is the African-American Church. There are 50,000-75,000 black churches in the U.S. with 19 million members. Church deposits total $2.6 billion per year. Ten percent of the churches underwrite business enterprises (Wilson, n.d.). Twenty eight percent of urban churches implement economic development programs (Jackson, et.al., 1997).

This project examines the nature and extent of economic development activities in African-American churches in Faubourg Treme, a poor inner city neighborhood in New Orleans, Louisiana. Treme is the oldest African-American neighborhood in the United States dating back to the early 1800's. It has a long tradition of African-American history, culture, and small business ownership as well as music (jazz), food, and architecture.

BACKGROUND

Inner City U.S.A.

U.S. inner cities represent the largest emerging market in the world. They represent $85 billion in annual retail spending excluding unrecorded income from legal activities that could add another $15 billion. That amounts to nearly 7% of total U.S. spending per year (Porter & Blaxill, 1997). In addition, inner cities in the 100 largest central cities of the U.S. are a substantial part of the economy. They account for 8% of the U.S. population (21 million people), 8% of private employment (9 million employees) and 814,000 business establishments (Initiative for a Competitive Inner City, June, 2004).

The interest of the private sector in expanding into the inner city is motivated by the recognition of the market potential offered by the inner city. These markets are attractive because they are large and densely populated. Despite lower per household annual median income ($24,900 versus $42,000 for the U.S.) the high population density results in the concentration of more buying power into a square mile in the inner city than suburbs.

Inner cities can possess up to six times as much buying power per square mile as surrounding areas. For example, the average consumer demand per square mile is twice as great in Chicago's inner city than in the suburbs ($57 million versus $27 million). In Boston, inner-city buying power is about six times higher per square mile than in more affluent suburbs ($71 million vs $12 million) (Stegman, 1998). Many inner cities suffer from significant outshopping. The ICIC estimates that 25% of inner city retail demand is not met by retailers in the inner city (ICIC, n.d.).

African-American Churches and Economic Development

Historically, the African-American community has used the church as a means for spiritual, social, and economic development. Churches founded insurance companies and banks during the early part of the 20th century. Economic development is considered by many black church leaders to be the new frontier of civil rights (Klump, n.d.). To others, the black

church must itself become an economic development institution (Shultz, 2001).

Many urban churches (African-American, white, and mixed) initially focused their efforts on community development activities such as housing, job training, daycare and social services. Some churches now include job and entrepreneurial training, business incubators, consulting support, credit unions, and commercial loans among their activities (Reese & Shields, 1999; Reese, 2004). Churches also include business incubators, consulting support, credit unions, and commercial loans among their economic development activities (Heim, 1995; Hodgkinson, Weitzman & Kirsch, 1988; La Berbera, 1992; Mares, 1994). Entrepreneurial efforts of churches in central cities include cooperative restaurants, recycling operations, daycare centers, construction cooperatives, the rehabilitation of former crack houses, auto shops, credit unions, job information centers and restaurant franchises such as McDonald's and Kentucky Fried Chicken, (Heim, 1995; Sherman, 1995; Gordon & Frame, 1995; Lincoln & Mamiya, 1990; Thomas & Blake, 1996). According to Cisneros (1996) programs have included low and middle income housing developments, credit unions to provide start-up financing to minority businesses and a community supermarket.

Reese and Shield (1999) studied the economic development activities of 15 faith-based churches in Detroit, Michigan. Six of the responding churches were African-American, two mostly white, one Hispanic, and six mostly mixed. Economic development activities carried out by these churches included job training, mixed social services and training, financial activities, housing, citizenship, training/relocation, CDC's, and cultural activities. Five of the churches operated free-standing businesses. These included a Coffee Beanery franchise, a cathedral restoration company, a food cooperative, a parking lot and an Hispanic Women's Center.

Reese (2000) surveyed 183 faith-based churches in Detroit about their economic development activities. Of these churches, 62% were African-American. Overall, very little economic development activity seems to be carried out by the responding churches in Detroit. Most commonly, respondents described shelter, clothing and hunger programs as their economic development activities. Those providing more explicit economic development programs were smaller in number. Six percent supported adult

education that stressed computer training or home maintenance, 5% provided job skills training or job search assistance and 4% have started businesses (Reese, 2000).

In closing, another example is Auburn Avenue in the heart of Atlanta, Georgia. The development is the result of the efforts by the Wheat Street Charitable Foundation, a nonprofit that serves as the development arm of the Wheat Street Baptist Church (DePriest & Jones, 1997). As of 2004 the development includes two strip malls which house ten small businesses. (Personal interview, staff member, Wheat Street Baptist Church, August 4, 2004.)

Faubourg Treme

Faubourg is a French term that means suburb. Faubourg Treme (or as it is commonly referred, Treme) is not only America's oldest black neighborhood, but was the site of significant economic, cultural, political, and legal events that have literally shaped the course of events in Black America for the past 200 years. Treme is adjacent to the French Quarter and near the Central Business District (CBD) of the City of New Orleans.

From its earliest settlement in the early 1700's and its incorporation in 1812, free persons of color played an important role within the entire geographic region of Treme. The most remarkable aspect of Treme is that its residents, free people of color and African slaves who acquired, bought, or bargained for their freedom, were able to acquire and own property in Treme. The ability to acquire, purchase, and own real estate during a time when the U.S. was still immersed in slavery and was very unique and only in New Orleans did this occur regularly and consistently.

Until 1927, Treme experienced urban development typical of its day including: extensive, dense residential settlement and important religious and commercial developments (Brooks & Wagner, 1995). Once a vibrant community in the 20th century, Treme became the site of many public infrastructure projects such as the municipal auditorium, a theater for performing arts, a public housing project, Louis Armstrong Park (which contains Congo Square, the origin of much African-American music and culture) and in the 1960's an elevated Interstate Highway (I-10) over North

Claiborne Avenue, a major thoroughfare which cuts through the heart of Treme.

North Claiborne had been the centerpiece of an African-American neighborhood. The street and its wide median was a place of cultural expression and celebration, and recreation and social interactions. The street served as a place of commerce along North Claiborne and provided residents a broad range of products and services (Samuels, 2000). There were pharmacies and drugstores, barbershops and shoeshine stands, restaurants, bakeries, hat stores, saloons, repair shops, banks, and markets that supplied the needs of everyday life (Samuels, 2000). With the coming of the Interstate, North Claiborne declined. The number of business along an eight block stretch declined from 132 in. 1960 to 35 in 2000 (Samuels, 2000). Today, North Claiborne is populated by bars, nights clubs, convenience stores, vacant lots, and abandoned buildings.

Like many inner-city neighborhoods in the U.S., Treme has declined. Treme is unique, however. The housing stock is historic. Many structures were built in the early 1800's. In addition to historic buildings, Treme has a tradition of Creole food and music (jazz). Last, Treme has been designated by the National Register of Historic Places as an historic district.

Treme Demographics: A Picture of Poverty

Treme is made up of poor, blacks and those who rent. The population of Treme is declining. Between 1980 and 2000 the population declined by 2,745 residents, a decline of 30 %. For the period 1990-2001, the decline in population was 12%. The loss reflects the flight of whites to other parts of the Metropolitan area, (Treme was 27% white in 1970 in contrast to 7.5% in 2001) and middle-class blacks to Eastern New Orleans and outlying parishes.

The number of households declined eight percent during 1990-2001. Some 88% of the housing units are occupied. Of these, 71% are occupied by renters, the rest by owners. An estimated 31% of vacant houses are abandoned or blighted. Over 55% of the buildings were built prior to 1939; some date back to the early 1800's. Some 34% of owner-occupied houses were valued at less than $50,000 each in 2000.

Household size has declined to fewer than 3 persons per household in 2001. By the year 2006 it is predicted that 47% of all households in Treme will consist of one person (Easy Analytic Software, Inc. 2001). Treme is 89% black and 7.5% white. Twenty-five percent of those residents over 25 years of age have less than a high school education. Employment is not the best as 43% of those 17-65 years of age were not employed in 2000.

The lack of employment is reflected in the income of Treme residents. Treme is poor. The median household income for Treme in 2000 was $20,500 in contrast to $27,503 for Orleans Parish. Sixty-six percent of Treme's households each earn less than $24,999 per year in household income; 40% live below a poverty-level income of $15,000 per year. Household income density in 2001 was $91,866 per square mile compared to $55,771 in Orleans Parish.

Treme has the weaknesses that are common to poverty-stricken neighborhoods. Surveys by the University of New Orleans College of Urban and Public Affairs have found that resident concerns center around: 1) housing including abandoned buildings, vacant lots, absentee landlords and the need to rehabilitate occupied buildings, 2) crime consisting of murders, drug dealing, prostitution and a lack of police presence, and 3) the lack of infrastructure such as sanitation, abandoned vehicles, trash, poor drainage, insufficient street lighting, potholed streets and bad sidewalks (Dufour, W., Bordelon, B., Hamilton, A., & Keeler, T., 1999). The current mayor (Mr. Nagin) found similar concerns of Treme residents in a recent community forum (Knabb, May 25, 2003).

Treme does have strengths, however. It is close to the New Orleans Central Business District and the French Quarter, has an historic past, community pride, and two very community-active churches. Other signs of recent economic development in Treme are listed below:

1. A $25 million initiative to promote home ownership in seven key areas in Orleans Parish including Treme (Eggler, April 8, 2004).

2. Gentrification of certain areas in Treme.

3. The founding of Urban Routes, a nonprofit neighborhood-based organization focusing on the preservation and promotion of historic Treme's culture. A walking tour is part of the Urban Routes effort.

4. The conversion of several property sites into church-sponsored low-income housing for the elderly (Thomas G., October 12, 2000).

5. The development of a jazz music complex by the National Park Service in nearby Armstrong Park.

Churches are a vital part of Treme and Treme residents value the close proximity of churches to their homes. Some who have moved outside of Treme still attend Sunday church service in Treme.

RESEARCH METHODOLOGY

It was determined that there were 16 churches in the Treme area. Responsible individuals at six churches were personally interviewed. Multiple interviews were conducted at two churches (St. Peter Claver and St. Augustine). Ten churches declined interviews or the researchers just couldn't get anyone to answer the telephone. The churches surveyed are listed in Table 1.

One issue faced by the researchers was to define an economic development activity. For the purpose of this study the definition used by Reese and Shields (1999) was used. If an outreach activity did more than provide emergency food, clothing, or shelter, it is related to an activity which

would return revenue to the church or to encourage/promote economic development it was considered economic development.

The survey instrument developed for this study consisted of five categories. The categories included employment, entrepreneurship, business operations, social services, and housing. Items included under the category of employment were job training, job placement, and other. For the category of entrepreneurship items included were business plan counseling, youth entrepreneurship education, adult entrepreneurship workshops, business incubator, and other. Similarly, business operations included church-sponsored credit unions or bank, revolving loan funds, food service, daycare center, elder care center, tutoring center, real estate development/leasing, other church operated business, and other. Social services included family and marriage counseling, parenting workshops, educational tutoring, GED preparation workshops, after-school programs, senior citizen activity programs, church-sponsored travel or vacation packages, credit counseling, drug and alcohol counseling, study skill counseling, health screening or wellness workshops, young adult recreation programs, and other. The housing category included housing rentals, and new housing developments such as apartments.

FINDINGS

The level of participation in each activity for the churches is summarized in Table 2. Employment and entrepreneurship activities were carried out by one church. Responding churches were most likely to take part in social services activities such as family counseling, programs for senior citizens and recreation programs for all ages. There was little church activity in business operations, even less in housing. A major exception in housing was St. Peter Claver. Its community and economic development programs are described next.

St. Peter Claver Catholic Church

St. Peter Claver church and school was founded in 1852 and is a leader in the Archdiocese and the City of New Orleans. It has 2,500

registered families and is the largest African-American Catholic church in Louisiana.

Community/economic development programs conducted by St. Peter Claver include a first-time buyers program which builds new houses in the community. The church is also completing a new wellness center which will house a church nurse, expanded food pantry, and a youth center. The center will offer programs such as ACT/SAT prep, GRE training, and computer classes. St. Peter Claver has sponsored with All Congregations Together, The Treme Neighborhood Planning Project (Dufour, W., Bordelon, B., Hamilton, A., & Keeler, T., 1999). The project was underwritten by the City of New Orleans Division of Housing in Neighborhood Development. Last, the church has been active in the City's Night Out Against Crime Program as well as having church leaders taking to the streets protesting against area night clubs and bars which have been sources of problems.

St. Peter Claver has an 80 year history of community involvement in service and leadership. Perhaps its most notable achievement has been the initiative of church staff and volunteers to form Ujamaa.

Ujamaa

Ujamaa Community Development Corporation (UCDC) is a nonprofit organization located in New Orleans. It is housed in the St. Peter Claver church offices and the Ujamaa Executive Director works closely with church leaders and staff.

UCDC has the primary function of addressing the concerns of low-to-moderate income families in New Orleans, although a major emphasis has been in Treme. UCDC's primary guiding principles are the following: (1) provide education and training for job opportunities and entrepreneurship, (2) develop decent, affordable housing for low and moderate income individuals, (3) promote cultural enrichment.

UCDC was formed in 1996. It was the fruition of a dream long held by Treme residents. A history of economic development activities by UCDC is summarized in Figure 1. Future plans for UCDC are summarized in Figure 2. A unique activity is the Treme Entrepreneurship Program. UCDC has acquired control of a square block of city property in Treme. Plans are to

build a new building and construct a moderately-sized commercial building. This building will house the Treme Entrepreneurship Program. This multi-faceted program will provide job training and education, cultural and social enrichment, and hands-on operations and business development. The hands-on operation is yet to be identified. Students in a Small Business Consulting class at the University of New Orleans studied the feasibility of having a coffee shop or a sandwich shop at that location. Ujamaa will partner with local nonprofits, schools, social and civic group to provide an entrepreneurship program for youth 14-18 living in Treme.

The St. Augustine Catholic Church

St. Augustine church was built in 1842. It is the oldest existing church in Treme and the first African-American Catholic church in New Orleans. The staff at St. Augustine provides basic or traditional social services such as marriage counseling, programs for seniors, drug and alcohol counseling, health screening, and recreation programs for the community and its members.

Under it current pastor, the church has evolved into a cultural and community center. The church hosts literary readings, musical performances, exhibits related to African-American history, parades, jazz masses and jazz funerals. It is the site of a major jazz mass during the Louis Armstrong Music Conference held each August, and attended by jazz enthusiasts from throughout the world. The historical significance of St. Augustine makes it an attraction for tourists visiting New Orleans, especially African-Americans.

St. Augustine is partnering with the Historic Treme Cultural Alliance and the International Project for Nonprofit Leadership, a joint project of the University of New Orleans (UNO) College of Urban Studies and Public Affairs and the UNO Metropolitan College. In 2001 IPNL established Urban Routes, a community-based learning project. One activity of Urban Routes is to establish a walking tour of Treme. Urban Routes has formed collaborations with cultural-based nonprofits, museums, faith-based organizations (St. Augustine Church) small businesses and Treme residents. Many residents recognize the economic development potential of the cultural and ethnic diversity of the neighborhood and would like to see an increase

in both the promotion of its cultural resources and positive publicity for the area. Assistance and counsel have been received from the State of Louisiana Lt. Governor's Office which is in charge of tourism for the state.

A recent addition has been the establishment of the St. Augustine Parish Tour organization. Tours are conducted for tourists and New Orleans residents of St. Augustine church and the church campus (buildings on the church grounds). Cooperation is carried out with the New Orleans Multicultural Tourism Network and the New Orleans Metropolitan Convention & Visitors Bureau.

Cooperation with Urban Routes (described below) and stops on the Urban Routes walking tour (Backstreet Museum, Armstrong Park, and the African-American Museum and others) is a strong possibility.

The area adjacent to St. Augustine church has the potential to develop small cooking/catering businesses, home-based businesses related to skilled building trades, and gift shops.

Church of the Sanctified Vision

This responding church was only one of the six to provide job training and placement. In addition, it was the only one to have a youth entrepreneurship program. As in the case of the other churches no other entrepreneurship-related activities were carried out. Sanctified Vision provides the various social services such as St. Augustine and St Peter Claver. There is no activity in housing except for assisting veterans.

DISCUSSION

The definition of economic development used in this study (and by Reese & Shields, 1999) is broad. It includes employment, entrepreneurship social services, business operations and housing. A narrow definition of economic development activities includes only employment (e.g., computer training) and entrepreneurship (youth entrepreneurship education, business start ups and housing.)

Reese's (2000) survey of Detroit churches found that only a minority of churches engaged in the narrow definition of economic development

activities. Five percent provided job training and/or job search help, 6% adult education that focused on computer training, 4% started small business, 8% helped in housing, and 7% provided health care services such as a clinic. Overall, about one-third of the churches engaged in some type of charity work or traditional church assistance and less than one-third of that number in economic development activities more narrowly defined (Reese, 2004). Similarly the majority of the Treme-based churches were heavily involved in social services. Only one provided employment training and help. It also had an entrepreneurship training program for youth (Church of the Sanctified Vision).

Next let us compare St. Peter Claver and St. Augustine. Both are significant historically dating back to 1852 and 1842 respectively. St. Augustine is noted for being the first African-American Catholic church in the United States. Each church is led by a highly energetic pastor, lay members and staff. Both have large congregations, many members coming to church there each Sunday though having moved from Treme to other parts of New Orleans. The churches provide similar social services, however, that is where the similarity ends. St. Peter Claver provides more activities in the business operations category such as a credit union, elder care center, and real estate development. Also, as noted in the findings, St. Peter Claver has been very aggressive in providing housing, home ownership, and apartment development, (especially for the elderly).

The approach to economic development by St. Peter Claver has been to provide liveable and affordable housing for the elderly and to promote home ownership in a neighborhood that is 75% rental.

St. Augustine, perhaps reflecting its historical roots, has taken a different approach by taking part in the Urban Roots Program. The long-range economic development objective of this program is to foster small business development in Treme as related to tourism.

How are the programs of the respective churches financed? Reese (2004) Found that economic development activities of religious congregations was enhanced by public sector funding. St. Peter Claver taps into federal funding through Ujamaa, a community development organization (See Figures 1 and 2). The source of funds for the Urban Routes program has

been a grant from the state of Louisiana through the efforts of a state legislator representing the district.

Both churches have developed partnerships in furthering their economic development efforts. For example, St. Peter Claver works with Ujamaa and local public entities such as the City of New Orleans, Total Community Action, the Housing Authority of New Orleans, the New Orleans Redevelopment Authority, the city Department of Housing and Neighborhood Development, as well as banks such as the Whitney.

St. Augustine has developed a partnership with Urban Routes which in turn works with the Historic Treme Cultural Alliance and the State Department of Culture, Recreation and Tourism.

In terms of economic development the two churches have taken different approaches. St. Peter Claver addresses improving the living accommodations of Treme residents (apartments) and furthering home ownership. St. Augustine by working with Urban Routes is fostering small business development related to cultural tourism. The latter approach takes advantage of the history of Treme, especially as related African-American history. Both churches have partnered with other organizations and have sought out public funding through these agencies, e.g. Ujamaa.

St. Peter Claver and St. Augustine have economic development strategies which address Treme's weaknesses (housing) and strengths (history, architecture, food, music). As pointed out by Reese (2000) the connection to the neighborhood appears to be cultural to extent that congregations are involved in both economic development and education activities. This is especially true of these churches, especially given their roles in Treme.

CONCLUSION

The churches surveyed took some part in social service activities which come under the broad definition of economic development activities.

The major churches in Treme follow different approaches to economic development, St. Peter Claver targets a weakness in Treme, inadequate housing and low home ownership. In the case of St. Augustine, economic development activities are directed toward tourism and the

development of related cottage industries. This approach plays to a strength of Treme, its history especially as related to African-American. Both churches partner with public and private sector agencies, the former being a source of funding.

As pointed out by Reese (2004) more research on faith-based churches and economic development is warranted. Future research should focus on congregational characteristics to determine patterns in local factors that stimulate and promote economic development activities (Reese, 2004). On the other hand, our research suggests that further study should be oriented toward the strategy used given the strengths and weaknesses of congregations in light of community threats and opportunities. Inadequate housing and the historical significance of Treme have brought about two different approaches to economic development. In addition, what are the strategic planning processes used, if any, by churches to foster economic development. The church and state relationships issue raised by public funding of faith-based activities make this a timely issue for additional study.

Table 1: Treme-Based Churches Surveyed

Name	Year Founded	Denomination
Church of the Sanctified Vision	1989	Non denominational
St. Davids	1937	Catholic
Nazarene	-	Baptist
Mt. Zion	-	Baptist
St. Peter Claver	1852	Catholic
St. Augustine	1841	Catholic

Table 2: Church Participation in Economic Development Activities (N=6)	
Economic Development Activity	Number of Churches Taking Part
Employment	
Job Training	1
Job Placement	1
Other	0
Entrepreneurship	
Business Plan Counseling	0
Youth Entrepreneurship Education	1
Adult Entrepreneurship Education	0
Business Incubator	0
Other	0
Social Services	
Family/Marriage Counseling	3
Parenting Workshops	1
Educational Tutoring	2
GED Preparation Workshops	1
After-School Program	2
Senior Citizen Programs	3
Church Sponsored Travel	2
Credit Counseling	2
Drug/Alcohol Counseling	1
Study Skill Counseling	1
Health Screening/Wellness	1
Recreation Programs	4
Stress Reduction	1
Business Operations	
Church Sponsored Credit Union	1
Revolving Loan Funds	1

Table 2: Church Participation in Economic Development Activities (N=6)	
Economic Development Activity	Number of Churches Taking Part
Food Service	2
Day Care Center	1
Tutoring Center	0
Real Estate Development/Leasing	2
Other Church Business	0
Housing	
Housing Renovation Project	1
New Housing Development	1
Housing Rentals	0
Veterans	1
Other	0

Figure 1
Ujamaa Community Development Corporation
Executive Summary
Development History in Treme

St. Ann Apartments

In 2001, UCDC completed the $3MM dollar construction of a senior apartment complex, St. Ann apartments, at 2117 Ursulines Avenue. The rehabilitation of blighted property and a former church/school accompanied the new construction. Today the St. Ann Apartments is a project-based complex consisting of 44 units rented to eligible Section 8 residents that are selected through a partnership with the Housing Authority of New Orleans (HANO). Sitting on Ujamaa Square, St. Ann Apartments also features a senior activity center, St. Ann House, that is utilized not only for activities of the residents, it is made available for special event rental to the citizens of Treme. The second floor of St. Ann House is designed for future use as office space for Ujamma and area businesses.

Childcare Center-Headstart

UCDC is currently renovating and expanding its child development center, leased and managed by Total Community Action (Headstart Program) to include childcare for infants. Construction, estimated at $350,000 is scheduled for completion in Spring 2005. The new site will consist of three buildings connected via breezeways. The child development center provides much needed daycare for the 75% female-headed households of Treme. It is also located on Ujamaa Square.

Community Wellness Center

UCDC purchased two buildings on Prieur Street in 2002 for use as a community wellness center. The buildings have been connected and are undergoing complete rehabilitation ($200,000). Once complete (Spring 2005), the center will be leased and managed by St. Peter Claver Church. The wellness center will house an on-site medical staff, a food distribution program and other social services sorely needed by the Treme community.

Program of All-Inclusive Care for the Elderly (PACE)

UCDC had the unique opportunity of being the developer chosen to complete Louisiana's first program of All-Inclusive Care for the Elderly (PACE) Center. St. Cecilia, a former Catholic Church, that had fallen into disrepair underwent a $3MM

Figure 2
Ujamaa Community Development Corporation
Executive Summary

Solution

The UCDC has designed a Comprehensive Revitalization Plan for the Treme Community, the first target area of UCDC. The two broad components are "The Ujamaa Neighborhood Revitalization Initiative" and the "Treme Entrepreneurship Program."

"The Ujamaa Neighborhood Revitalization Initiative"

The UCDC has identified blighted property made available by the City of New Orleans. The UCDC will acquire these properties and newly construct or rehabilitate homes for purchase by low- to moderate-income individuals. The use of soft second funds, down payment assistance, individual development accounts and home buyer education and financial literacy will increase mortgage availability and sustainability to traditionally under-served populations living in or relocating to the Treme Community. UCDC has identified three initial phases of development. Phase I will entail newly constructing ten (10) homes at approximately 1300-1500 sq. ft.

As UCDC moves forward in its mission, it plans to develop (new construction or rehabilitate) ten (10) affordable homes in the Treme Community in 2005, while increasing that annual volume at a rate of five (5) additional houses per year over the next five (5) years. Partners are listed below.

"Catch the Dream, Treme"

UCDC announced a $25MM affordable home ownership partnership with FreddieMac in April 2004.

Whitney CDC

Whitney CDC is partnering with UCDC to provide interim financing for new construction along with providing affordable mortgage products for the consumers.

NOCDF (New Orleans Community Development Fund)

NOCDF is partnering with UCDC to provide a line of credit for acquisition of blighted and abandoned property from the New Orleans Redevelopment Authority (NORA).

DHND (Department of Housing and Neighborhood Development)

DHND is partnering with UCDC to provide HOME funds for acquisition and related costs along with an innovative "Soft-Second Mortgage" that can provide subsidy

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DAGWOOD DOESN'T WORK HERE ANYMORE?: THE DENOMINATOR, UNEMPLOYMENT, AND WAR

Angela Moore Sparkman, Meridian Community College
Doh-Kuhl Kim, Mississippi State University
Jack E. Tucci, Mississippi State University

ABSTRACT

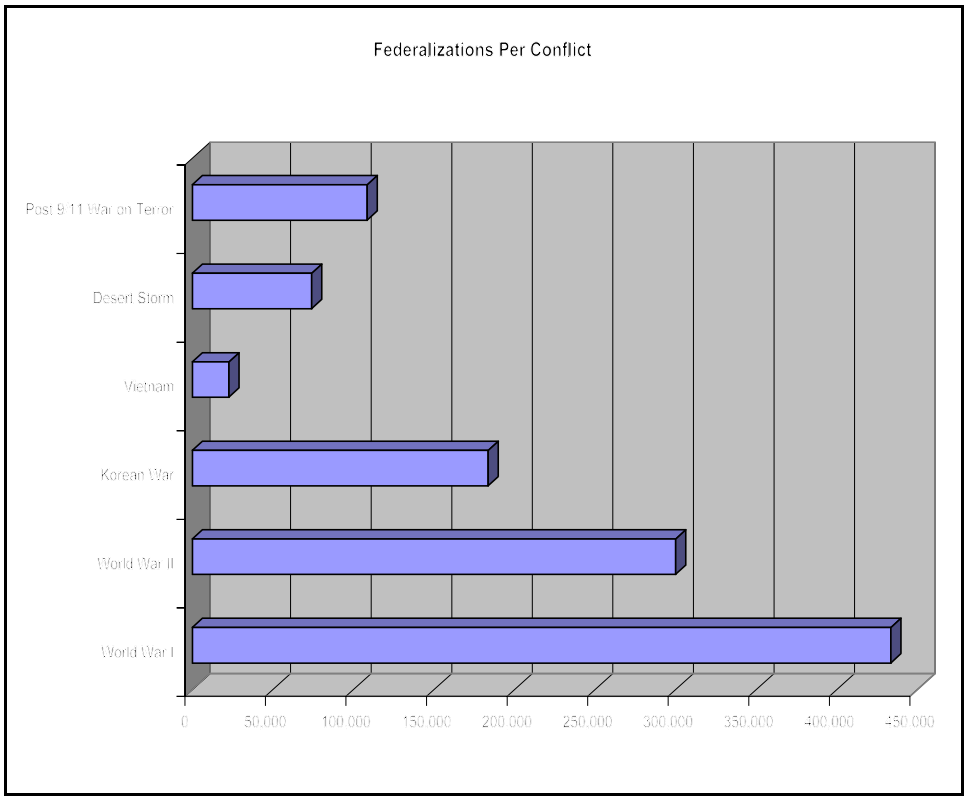
In the years leading up to 2001, the United States economy saw an unprecedented level of growth. From all accounts, economists and the general public alike agreed that we had never been here before. During this period, the Dow Jones Industrial Average reached 11,000 and unemployment was at an all time low of 4.0%. So where are we today? In the last year, the DOW reached 10,000 before dropping again, and America's unemployment rate ended the year of 2003 at 5.9%. The United States economy is in its third year of recession. With employment at an unsettling level, could it be worse if it were not for the effects of war? Everyone, including our President, wants to be able to say that we have hit the bottom and that we have begun recovery. Has the time come that we can begin to relax and ride the American dream?

INTRODUCTION

It's Sunday morning. You've gotten out of bed, and with your steaming cup of Java in hand, you've settled in your favorite chair to read the Sunday comics. You notice that the comics just aren't the same as they used to be. Beetle Bailey isn't there; the author has noted that Beetle has been shipped out to Iraq and will not be back for 24 months. You turn to look for Dagwood because you know he will be there. There is a stamp saying, "RESERVE FORCES ACTIVATED FOR NEXT TWELVE MONTHS. DAGWOOD SHIPPED OUT!" Instead of Dagwood going to work, there is

a replacement in the comic strip. Twelve months later, when Dagwood returns, his boss and all the readers have really learned to love the new character. What is Dagwood (and Dagwood's boss) to do?

Sure, we are just talking comics here, but this is what is going in today's workforce. In an unprecedented amount, our country has activated the guard and reserve in an effort to fight the war on terror because of the reduction in forces of our permanent military staff (Mazzetti, 2004). In President Bush's remarks on November 8, 2002, he said "Our National Guard and Reserve units comprise 38% of America's military forces" and he continued to say, "Our volunteer National Guardsmen and Reservists rely on their employers for essential support and encouragement that often come at the employer's expense" (National Employer Support of the Guard and Reserve Week, 2002). What does that do to our economy?



How do we measure the effect this has on the employers of all of those members of the National Guard and Reserve who have been full-time employees and now are full-time soldiers? Is it an unfair indicator of our economy to say that unemployment is going down because of new job creation or is it because we need replacement workers for the jobs that are being vacated due to the activation Reservists? In the year since President Bush's comments, the business world has responded. Returning "citizen soldiers" are coming home to find their job is no longer there, and 1,300 have filed complaints with the Department of Labor (Jobs and economic growth, 2003). Economists are asked to think in both costs and benefits and it appears that the government is thinking of the benefits that they receive from the "citizen soldier" and the employers of these "citizen soldiers" are incurring the costs (Arnold, 2004).

Milton Friedman wrote, "Economics is the science of how a particular society solves its economic problems," and continued his thought with "an economic problem exists whenever scarce means are used to satisfy alternative uses" (Arnold, 2004). How will the United States 2004-2005 be remembered? Did we use our resources to the fullest or did we squander them? How is our government using the "scarce means?" Are they satisfying the correct needs? Friedman also goes on to say "When an executive decides to take action for reasons of social responsibility, he is taking money from someone else" (Twomey, Jennings, & Fox, 2002). How much social responsibility should our employers have? And what will that do to the bottom line of our economy?

Alan Greenspan, our Federal Reserve Chairman, said the following about our involvement in the war front of Iraq, "I would be very doubtful if the impact on the economy is more than modest, largely because this is not Vietnam or Korea. Korea – it had a really monumental effect, basically because the economy was so much smaller than it is today"(Dettmer, 2002). Since the years of the Korean War, our economic indicators have changed, our laws have changed, and where the United States stands in the world is the measure that we will need to judge where we should be as a country. This paper will review the law that has changed employers' rights and our country's use of volunteer soldiers. Concurrently this paper will also look

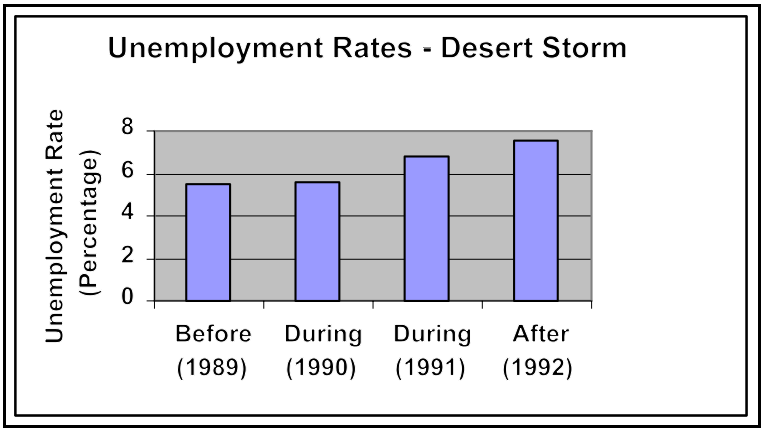
at the United States' balance of trade, inflation, Real GDP, full employment, and unemployment.

THE LAW

"Thousands of reservists and members of the National Guard answered our country's call and now they're starting to come back from their mission" said Secretary of Labor Elain Chao. A law called USERRA guarantees that the jobs they left behind will be waiting for them. Most employers know more about this law, those that don't can call 1-866-4USADOL. As Secretary Chao says, "They did their job – now let's do ours." This was a public service announcement used a social marketing technique to remind employers of their ethical duty to those members of the National Guard and Reserve. This marketing effort was to remind employers that there was now a law that could be enforced against employers if they did not treat the "returning from active duty" employee as if they had never left (Agency Group 08, 2003). Many left their employment to become full-time soldiers and have returned to get back into full-time employment.

According to Scoot Woodham of the National Guard Bureau, the National Guard is made of two divisions: Army and Air. The National Guard's first and primary responsibility has been to state militia, and then the President of the United States has the right to federalize these state militias for active duty in a time of a national crisis. Ms. Renee Hylton, historian for the National Guard Bureau, notes that after Vietnam, the Air National Guard can only be voluntarily activated but that the Army National Guard can be involuntarily activated for a period of 18-24 months. Each military division within the United States has its own reserve units. The reserve units of our armed forces are made up of men and women who have been previous members of the military (now, civilian), and they can be federalized in the event of the national crisis. (Woodham, 20004) (Hylton, 2004) Many laws of the land were implemented because the citizens of the United States had previously been mistreated after coming home from the previous wars or conflicts. When the violators did not voluntarily change their course of action, our legislators felt it was their duty to deal with it and change behavior through laws (Anderson, 2002). This is what occurred after the

Persian Gulf War. As the National Guard and Reserve came back after the war, many were left without a job or a demotion with no legal recourse to get what they felt was rightfully theirs. That unethical treatment of our returning veterans prompted the passing of the Uniformed Services Employment and Re-employment Rights Act (USERRA) in 1994 (Leonard, 2003). This law "gives employees who take a leave of absence for active military service certain statutory rights – not only to re-employment but to specific coverage for retirement and wellness benefits" (Lewison, 2004).



"All government has powers that they never possessed before" is certainly one way to express the way that our government has begun to control the United States economic state in the world (Twomey, Jennings, & Fox, 2002). During previous wartime needs for serviceman, it has been the individual citizen that was involuntarily drafted into the service. Today the National Guard and Reserve made up of men and women that if needed, will defend their country; yet, in the mean time, each is expected to be just part-time soldiers and full-time employees. Not only is this a commitment for the employee to become a full-time soldier if needed but it also has become a commitment for the employer.

There are various support systems for the employers and employees which includes the Employer Support of the Guard and Reserve (ESGR). ESGR was formed in 1972 at the anticipation of the end to the draft. The ESGR calls the members of the National Guard and the Reserve, "Ready

Reserve." ESGR reports that the "Ready Reserve" makes up 46% of total military power for the United States and the success of the "total force" is dependent on the success of the support from the employer and community for the "Ready Reserve" (Information about ESGR, 2004). Even with this law, it does not remove the obstacle of unemployment or demotion for many of the guard and reservists as they return home. Employer support offices arranged through our defense department are reporting as many as 100 calls per week of potential violations of the law USERRA (Jobs for returning troops, 2003).

Is anyone concerned about the rights of the employee that was hired to replace the activated member of the National Guard and Reserve? The rights of the returning employee supersede the rights of anyone hired to replace him or her, even if the replacement ends up with no position at all (Lewison, 2004). A replacement employee has no rights to keep the job and the employer has no rights if they want to keep them. According to USERRA, the returning civilian soldier must be returned to their civilian job with "a position of like seniority, status and pay" (Lewison, 2004).

NUMBERS OF EMPLOYERS AND EMPLOYEES AFFECTED

Of 400 U.S. employers that were recently surveyed by Buck Consultants, 85% reported having "military reservists on staff" and 83% had been affected by one or more being called to full-time duty. Twelve percent are doing more that the law requires by continuing full pay for 3-6 months or making up the difference between military pay and civilian pay (54% of the businesses surveyed). Some businesses that cannot do that are at least continuing medical benefits for twelve months (43%) (Leonard, 2003). Nevertheless, the question remains; are the executives making these social responsibility decisions, "taking money from someone else – from the stockholders, in the form of lower dividends; from the employees, in the form of lower wages; or from the consumer, in the form of higher prices?" as economist Milton Friedman questioned (Twomey, Jennings, & Fox, 2002). President Bush commented on this when he said of the activated members of the National Guard and Reserve, "They rely on their civilian employers to

put their national interest above corporate or self-interest" (President thanks employers for support of Guard and Reserve forces, 2003).

How many reservists have been called out of the civilian world to that of active military? "American citizen soldiers have served in every conflict since the Revolutionary War," stated President Bush (President thanks employers for support of Guard and Reserve forces, 2003). There have been 243,000 reservists called to active duty and around 183,000 actively serving (Leonard, 2003). Col. John O'Shea, a representative of the Reserve Officers Association (ROA) states our concerns before this war is over are valid, "The actual pool of reservists is somewhere around 900,000 and most of them do hold full-time jobs. So there are plenty of employers who have reservist on their staffs and could still be affected by another call-up by the military" (Leonard, 2003). President Bush stated "…more than 1.2 million men and women serve in the Guard and the Reserve. That's almost half of America's total strength. These men and women face the difficult challenge of balancing military duty with civilian employment." (President thanks employers for support of Guard and Reserve forces, 2003). Out of 200 American citizens, only one wears a uniform for the armed forces which is comparatively low in recent years and the brunt of this duty is falling on the shoulders of the National Guard and Reserve. "Many of the part-time soldiers mobilized the first days after September 11 have yet to be deactivated. Within months, reservists will make up 40 percent of the total U.S. force in Iraq," says Lt. Gen. Steven Blum, chief of the Army National Guard (Mazzetti, 2004).

President Bush also seems to understand the sacrifice that the businesses across America pay for having member of the guard and reserve work for them. He states, "our Guardsmen and Reservist depend on the understanding of their employers. Across America, where units have been activated, employers at offices and factories and schools, hospitals and other workplaces have been understanding and really supportive" (President thanks employers for support of Guard and Reserve forces, 2003). There are numerous support agencies for both the employers and employees that are affected by the activation of members of the National Guard and Reserve. Egsr.com provides a complete listing of support agencies (Related Sites, 2004).

BALANCE OF TRADE & INFLATION

Would our employers be more willing to be patient with the loss of their workforce if they saw they were reaping the benefits somehow? Is our dollar worth as much, what does our balance of trade look like and what do they have to do with one another? As the American economy moved from the local community state to the nation wide state, the individual states were unable to provide effective regulation of business. It was inevitable that regulation would migrate to the central government." (Twomey, Jennings, & Fox, 2002). The United States government has regulated trade well. Trade benefits have increased due to trade agreements like NAFTA (North American Free Trade Agreement) and the Uruguay Round global trade agreement which have provided American consumers with more choice and lower prices on the goods that they consume which total "$1,300-$2,000 annually for the typical U.S. family in savings" (Fact sheet: making life better for America's consumers, 2004).

The dollar is finally shrinking in worth. "Since 1982, the United States has run an every growing current account deficit – the gap between what we buy and reap from investment abroad and what foreigners sell to us and garner in returns on their U.S. investments," says Allen and Lim (2004). That should have driven down the US dollars much before now, but only in the last year have we seen a major decrease in the value of the US dollar in terms of other currencies. If we had seen the dollar's value shrink before now, we would not have the $3 trillion in net debts owed to other countries. The dollar has lost one-forth of its value since February 2003. Perhaps now, we will see the number of exports increase due to the fact that others currencies can buy more American goods and the American domestic population will buy less imports due to the price increases.

Inflation is a measure by the consumer price index (CPI), which is garnered by the Bureau of Labor Statistics. According to the CIA World Factbook, the inflation rate of the United States in 2002 was a mere 1.6% (2004). According to one of Council of Economic Advisers to the president, the public should not be concerned about inflation. "Inflation is primarily a monetary problem and as long as we have a central bank as competent as

ours, I don't think inflation will be a problem," said Gregory Mankiw, who is the chair (Allen & Lim, 2004).

REAL GDP AND ECONOMIC STABILITY

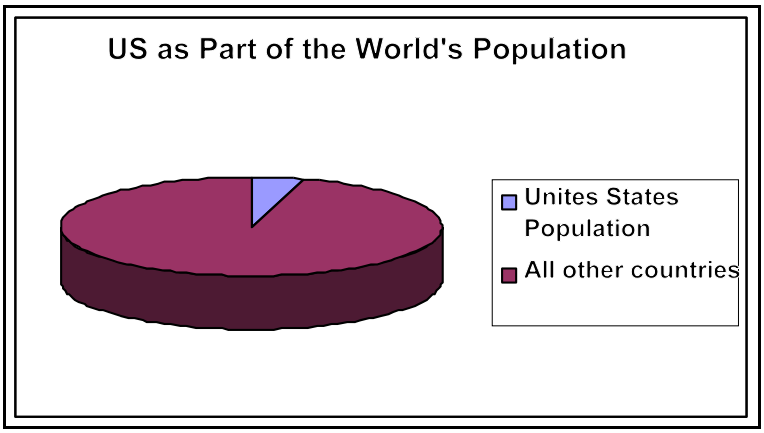
In the past twenty years, the United States has not seen growth in Real GDP like that which was recorded in the second half of 2003. Real GDP grew at an incredible 6.1% (Jobs & Economic Growth, 2004). A growth rate increase of that proportion indicates a significant increase in value of what we are producing within our country's borders. Certainly unemployment would have to have been reduced to have the additional workforce to create such an increase. If the Real GDP growth is any indicator, "an old-fashioned upswing in the business cycle is finally under way," and increasing our inventories and exports are what is making the difference (Copper & Madigan, 2004).

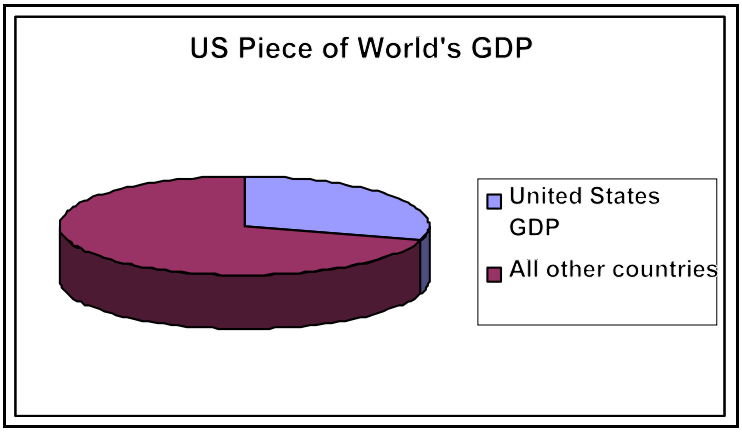
The state of our economy is measured by whether or not our Real GDP is increasing or decreasing from the previous quarter. Our US economy has entered into five periods of recession since 1970: 1973-1975, 1980, 1981-1982, 1990-1991 and the recession which began in 2001 (McConnell & Brue, 2005). Do the current figures that are out for second two quarters of 2003 truly indicate that the last recession is over?

How strong is America's economy? The United States of America accounts for only 4.5% of the world's population. The United States does forty percent of the world's use of the World Wide Web. The spending on military by our military leaders makes up 36% of the world's spending on the military (which is equal to the total of the next nine largest spenders). Our GDP reflects approximately 30% of the world product (Kennedy, 2001). Our economy appears strong on the world front.

The challengers of today's American economy, are tomorrow's China, India, Russia, and Brazil. Zhu Min, general manager and economic advisor to the president of the Bank of China, predicts, "China will be number two by 2020. China's GDP will roughly become $4-5 trillion. The United States will go to US $14-16 trillion." Bill Gates commented on China's growth as well, "It's breathtaking. It's capitalism at full speed. The whole world's going to get richer." (India, Brazil Predict Economic

Strength, 2004) It has been noted that in the last decade, "China has become the world's workshop…India is becoming the world's back office," (Zuckerman, 2004). These jobs have always traditionally been thought as American, but we are no longer in the world of "tradition." We also do not see the other leading economic competitors are not committing a major portion of their country's resources to stabilize another part of the world.





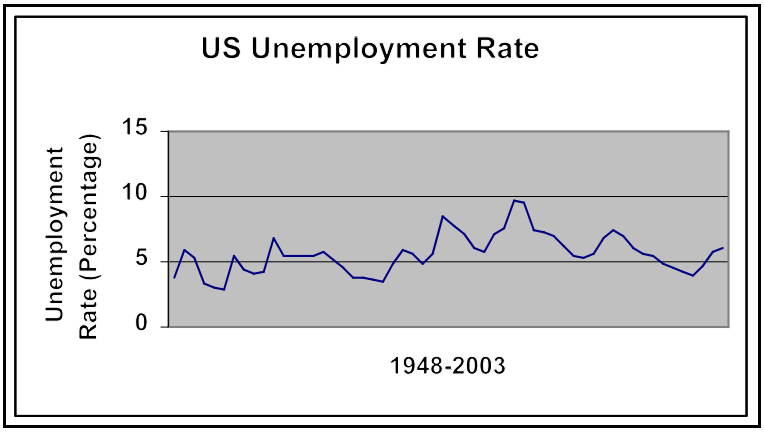
FULL EMPLOYMENT

How full employment is determined is still a question of deliberation. However, our current president vows that he "will not be satisfied until every American looking for work has found a job" (Jobs & Economic Growth, 2004). Is President Bush saying that America should have an unemployment rate of 0%? For some that is what "full employment means (Walker, 2003). Still others proclaim that in order to have "a dynamic, changing economy," your unemployment rate will never be zero due to frictional or structural unemployment (Arnold, 2004). "Economists accept the idea that some unemployment - perhaps 5 to 6 percent – is natural" (Walker, 2003). Using the idea of full employment, our most current unemployment rate is 5.6% (Labor Force Statistics from the Current Population Survey, 2004) that would lead to the conclusion that our economy is currently at full-employment.

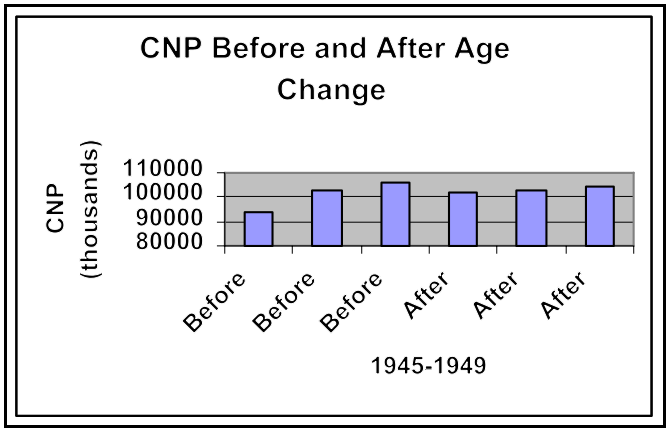
Instead comments like "unemployment remains high by recent standards," leads to reduced citizen confidence in our economy and to the reluctance in the employment of those citizens (The Bush Victory in Iraq, 2002). It appears that even our most basic issue (happiness) is that we place our constraints on how we would feel and respond now if placed in the conditions of the past, not how we as citizens actually were in the past (Easterlin, 2002). Could that not also be true as how we measure how well we were doing as a country?

Is everyone in the United States surveyed to calculate the employment rate? In fact only 60,000 households are surveyed by the Bureau of Labor Statistics (Miller, 2004). Are the 60,000 households surveyed a true representation of the 290 million individuals that live in the United States. A second way to look employment of our population is to survey business payroll, but the data lag is about 3-4 months for that information to be available that it would be untimely (Miller, 2004). The discrepancy between the two is recorded to be growing to 6-7 million individuals in recent years (Miller, 2004). Do we have a true measurement of employment?

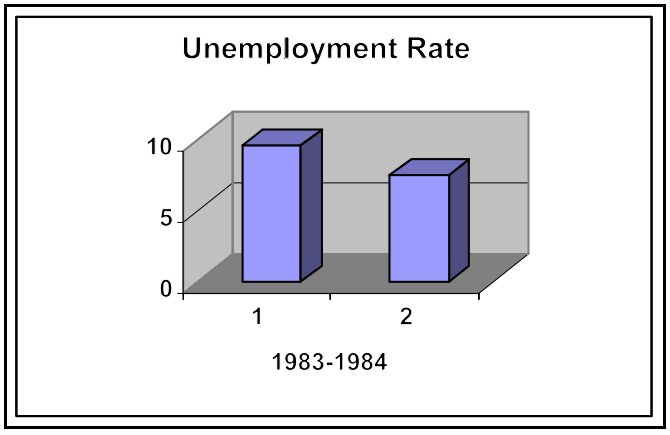
UNEMPLOYMENT



According to the Bureau of Labor Statistics, from 1940 to 1948, all persons that were 14 years of age and older, not institutionalized, and not in the military, were considered to be part of the civilian noninstitutional population. That age changed to 16 in 1947 which resulted in a reduction of the "workforce" according to our government's definition.



The only other governmental change (other than the change in the legal working age in 1947) occurred to the numerator for the unemployment rate. Who can be counted as unemployed changed with Ronald Reagan in 1983. At this time, Reagan wanted to reexamine structural unemployment. According to Durst 2000, the policy changed occurred to make unemployment rates decrease but with a false sense of security. But was it really? Reagan's idea was that someone that was structurally unemployed, was truly unemployable until they retrained. Maybe this change was for the better. Perhaps, it derived a truer number for the unemployed. If someone is structurally unemployed, there is not a job in the current economy for them. They must drop out of the market, retrain, and become a reentrant with new skills. Maybe Reagan making this policy change was the best for those that continually looking for a job to fit their skills that does not exist to is to force them to retrain and off of unemployment through the label of "unemployable." (Durst, 2000) (Feldstein, 1997) This change did make the unemployment rate decrease. The following illustration depicts the unemployment rates in 1983 and 1984. The data comes from the Bureau of Labor Statistics. There was a significant drop in the unemployment rate after the change was made.



When reflecting on the history of our country, most would say that our economic policies are decided with the reflection of the great depression in our eyes. High unemployment rates could only lead to poverty and a

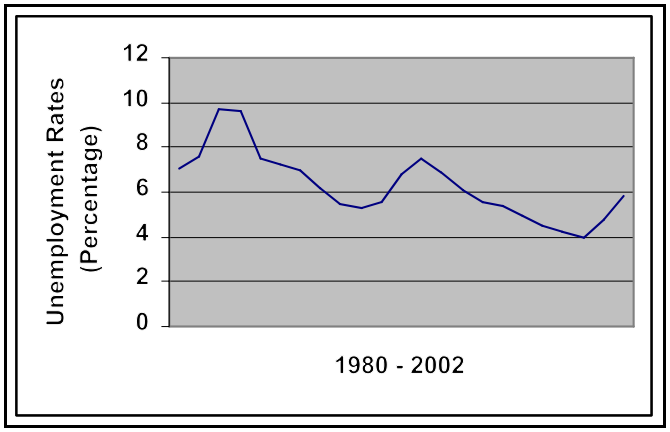
destruction of order – political or social. The conclusion was that unemployment should be avoided at all costs. The decision makers listed economic growth and full employment at the top of the agenda and concerns on inflation were important but took a back seat to employment issues. This type of economic planning occurred up until the late seventies when our economy proved that rather than low unemployment being the cause of high inflation, that the opposite was true. Could it be true that higher unemployment and higher inflation went hand in hand? Beginning in 1992, it has been noted that unemployment and inflation move in the same direction (lowering unemployment is meaning lowering inflation or at least stable inflation) (Notwotny, 2003).

In April 2000, the unemployment rate of the United States was at a thirty-year low of 3.8 percent. It drifted higher for a few months and went back down to 3.9 for October and December of 2000, and then the unemployment rate began to climb. According to the Bureau of Labor Statistics, the U.S. unemployment rates have hovered between 4.3-6.1 percent since our economic recession began in March 2001 through January 2004 (Labor Force Statistics from the Current Population Survey, 2004). There are approximately nine million people counted as unemployed today with 2.3 million more not working but cannot be counted as unemployed because they have become discourage and have quite the search for employment (Bush's War Economy, 2003).

When defining how much of our 290 million citizens are unemployed, the civilian non-institutional population is considered which removes those that cannot work (those under the age of 16 and those that are institutionalized) along with all of those who are in the armed forces from the total population (Arnold, 2004). When one starts to consider activating the National Guard and Reserve, one must remember the civilian non-institutional population is declining because according to the model, members of the armed forces are not part of the civilian non-institutional population. The individuals were removed but the jobs that those civilian soldiers once did remained. These jobs must be done. So the employer hires someone that is currently unemployed to do the job which make the number of unemployed persons decrease, but not as much as the number of people that have been taken out of our civilian noninstitutional population. Is it only

because we removed a person who was previously doing a job? What will the unemployment rate be as the Reserve and Guard return to their civilian posts? Let's look at unemployment rates before and after each conflict that the National Guard and Reserve have been a part in the last two wars.

According to the CIA World Factbook, the unemployment rate of the United States in 2002 was a mere 5.8% with a civilian labor force of 141.8 million of a population of approximately 290 million (2004). Below, one can see what our unemployment rate has done form 1980-2002. Source: Unemployment Rates, by selected countries, 1970-2003 (2004). *World Almanac & Book of Facts*, 2004



Reflecting upon the numbers above, one can see that unemployment increased during the years our economy was affected by the Persian Gulf War in the early nineties in addition to the end of the Cold War, which some say is the reason that our economy slid into a deeper recession (Mollins, 2003). Compounding this were the events of September 11th and the United States entry into its war on terror. Since September 11th, we have seen a steady increase in unemployment than from the pre-war years. Could this be further evidence that we are missing our mark on the calculations of unemployment numbers? More people might not be unemployed, but actually more are employed through the military and the civilian non-institutional population is smaller than in nonmilitary times. We just reduced the denominator by a greater amount than the numerator. The unemployment

rate is calculated by taking the number of unemployed and dividing it by the civilian noninstitutional population (Arnold, 2004). If during the activation of the National Guard and Reservists (wartime), the employer chooses to assign those tasks that are vacated to another employee and not hire someone, the numerator would remain the same and the denominator would decrease. Again, this would make the unemployment rate increase without there being any additional people' unemployed and looking for a job.

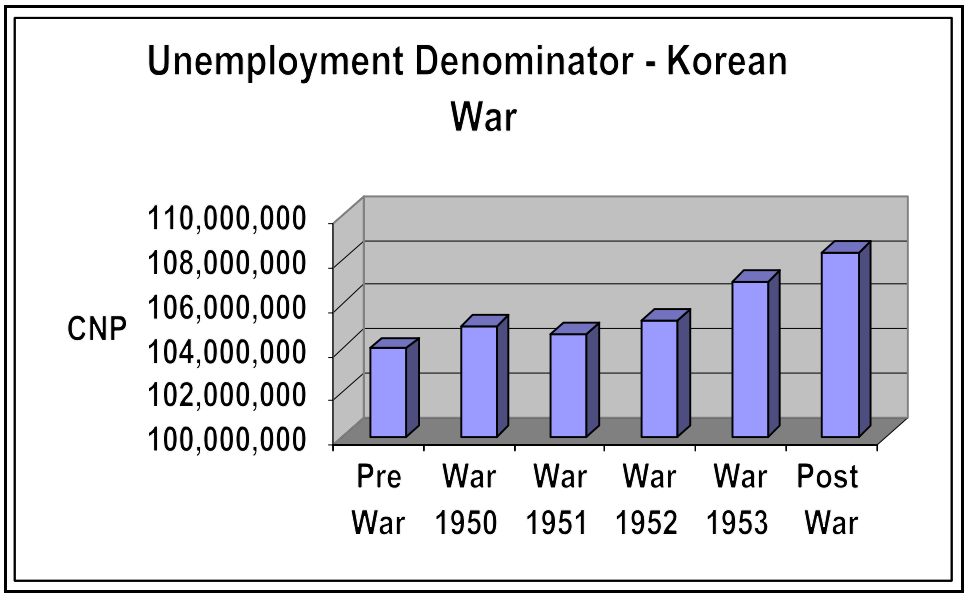
One potential solution to this problem is to increase the number of full-time members of the armed forces and reduce the number of National Guard and Reserve men and women that are being activated. Both parties that represent both sides of Capital Hill are for increasing the size of our military for the first time in over 16 years since the ending of the Cold War, but the Pentagon is not. Everyone but the Pentagon seems to see that the call-ups of the Guard and Reserve have only patched the problem and have been a temporary solution. In 1987, our full-time military was at a peak of 2.2 million persons and dropped to 1.5 million in 1988 and has remained at that level (Squiteieri, 2003).

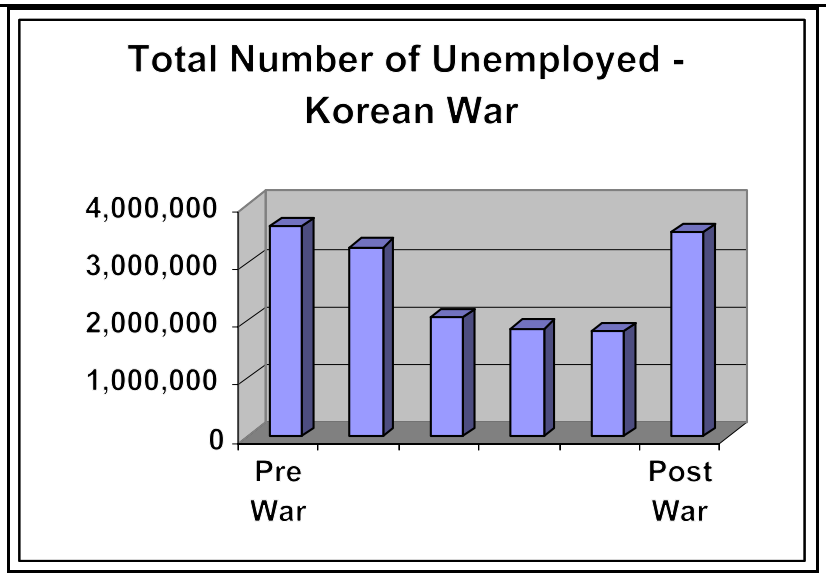
Perhaps the Pentagon is not in favor of this because they currently operate under a budget of $401 billion which in the largest since the Reagan era. Considering the amount of money the Pentagon is spending, its military force is one-third smaller than in the Reagan era (Mazzetti, 2004). What should our military forces be as Iraq rebuilds? In post-war Germany, the United States "deployed one soldier for every ten citizens," which is what President Bush used as a model. Although in post-war Iraq, there is "one soldier for every 154 citizens." Donald Rumsfeld says the "our goal is not to create a dependency in Iraq by flooding it with Americans." Our current Administration wants to "Iraqify" it. Let the Iraqis handle their rebuilding but with minimal support from the United States. What is the minimal support going to cost our country in the process (Crunch Time, 2003)?

If you are merely measuring how many people are employed or unemployed by looking at the rates, we have shown that the percentages can be misleading. The unemployment rate has been continually dropping since its high of 6.3 in June of 2003 (Labor Force Statistics from the Current Population Survey, 2004). How can this be when we continually hear that the Bush administration is losing jobs? "More than 2 million jobs have been

lost since Bush took office," (Kadlec, Carney, Zagorin, Kiviat, & Thottam, 2003). The current administration got a substantial tax cut that they promised would bring an average of 306,000 jobs a month, and give 510,000 American citizens employment before the end of 2003, but it has not. Only one-third of the anticipated job growth has occurred (Zuckerman, 2004). If jobs are not being created, how is unemployment affected? How could the unemployment rate continue to drop one-tenth of one percent every month for the previous seven months? Maybe, just maybe, it has something to do with the denominator for the unemployment rate.

During the Korean War, we saw the denominator actually decrease during the first year of the way. Looking at the following graph, one can see that the denominator (civilian noninstitutional population) decrease. The numerator (number of unemployed) continually decreased in size except in the postwar numbers perhaps due to the fact that the number of soldiers activated came back and found no job waiting. The data was retrieved from the Bureau of Labor Statistics.





CONCLUSION

It is true that there is no country in the world that is an economy of pure capitalism or pure socialism, but is what we require of our business is America pushing our economy more and more toward socialism (Arnold, 2004)? How long can our businesses be supportive of the guard and reserve by continuing their social responsibility to our country? How long will we be required to endure the effects on our economy while trying to provide stability in others?

The United States of America won its independence on July 4, 1776 and it took until September 17, 1787 for our countrymen to put together a document that would outline the relationship of our government and its people (CIA – The World Factbook –United States, 2003). Are our businesses and our economy prepared to endure the strains for the next eight years until Iraq defines theirs? We still have our economic problems to deal with: raging medical and retirement costs for a rapidly growing senior population, an increasing imbalance of trade, and a potential for a rise in inflation with "stagnation of family income in the lower economic groups" (CIA – The World Factbook –United States, 2003).

The president has growing power and influence in our country more than ever before. With Republican control over both sides of Congress, he is "leader of the lawmaking process" (Twomey, Jennings, & Gox, 2002). In the President's release dated February 2, 2004, he did say that his budget would focus on "winning the war on terror by defeating terrorists and their supporters," and "strengthening our economy" (President Bush's FY 2005 Budget, 2004). President Bush and his policy sent $100 billion last summer to the citizens and have had enormous increase in military spending which could be the reason for the unprecedented 7.2 percent growth in the third quarter of 2003. Increasing the governmental spending does make our economy grow but it should be noted that it could have a greater multiplying effect if used for improving the infrastructure of the county (schools and roads) than used on defense spending. (Bush's War Economy, 2003)

Have we stretched our military resources too far? Does our military need to be increased to have additional full-time members? "Fifty-four of the 61 members of the House Armed Services Committee…have sent President Bush a letter urging him to expand the U.S. combat force…{asking Bush to} reassess the ratio between active and reserve forces used in long deployments because of concerns that the military is overly reliant on the Guard and Reserve in the war on terrorism." (Squitieri, 2003)

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