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JOURNAL OF ECONOMICS AND ECONOMIC EDUCATION RESEARCH

CONTENTS

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

ECONOMIC LITERACY: BASELINE DATA FOR STANDARDS BASED INSTRUCTION AND CURRICULUM

Susan J. Jenkins, Idaho State University
Deanna M. Sharp, Idaho State University

ABSTRACT

Today's students, the next generation of consumer decision-makers, display misunderstandings and ignorance about our economic system. Two-thirds of high school students failed a nationally normed test of economic understanding, including the core concepts of money, inflation, and scarcity (Harris, 1999). These findings raise serious questions about the quality of the economic education students receive.

This repeated-measures study was designed to support the development, and improve the delivery, of economic education programs. The Basic Economics Test (BET), a nationally normed and standardized test published by the National Council on Economic Education, was administered to 5th graders in Southeastern Idaho. Over 1000 students from 54 classrooms were tested and contributed to the collection of baseline data. Analysis of these data supports the philosophy of integrating economic concepts early in the educational process and across all curricula.

Children make economic decisions continually. Economics is everyday life! The vision is "children growing to become productive workers, responsible citizens, knowledgeable consumers, prudent savers and investors, effective global participants and lifelong decision-makers" (Dempsey, Meszaros & Suiter, 1999, 22). Implications of this study include: (1) standards based instruction and curriculum; (2) teacher training; and (3) curriculum enrichment.

INTRODUCTION

The basic economic concepts needed for reasoned decision-making are essentially nonexistent in the vocabulary of young people in our society. Today's students, the next generation of consumer decision-makers, display misunderstandings and ignorance about our economic system. On a nationally normed test of economic understanding, the average score among high school students was 48% --- failing! Yet, half (53%) of all high school students are 'very or somewhat interested' in economics. And, two in five students do not receive economics as a part of their education (Harris, 1999). These findings raise serious questions about the quality of the economic education students receive.

Understanding what is meant by economics and economic education is important in considering why economic education must be included in the curriculum. A standard textbook definition of economics is 'the study of the allocation of scarce resources to alternative and competing ends.' Others, emphasizing that the concepts and propositions from economics are widely applicable, simply define economics as the 'science of making decisions' (Walstad & Soper, 1991, 36).

An understanding of basic economic concepts and their *interrelationships* is more important than factual knowledge. This involves an appreciation of how the concepts relate. Ultimately, the goal of economic education is more responsible and effective citizenship through helping students acquire the ability to use economics as independent decision makers confronting problems, personal and social, rather than merely helping them gain knowledge of the facts, concepts and assumptions that comprise part of the discipline (Miller, 1991, 37).

If the purposes of economic education are to be achieved, children must be helped to organize their understanding of the choices they make; understanding toward competence in *applying* that knowledge as decision-makers (Saunders, Bach, Calderwood & Hansen, 1993). "Young children learn early that they cannot have everything they want. Unfortunately, they do not always understand why this is the case or why each choice involves a cost" (Meszaros & Suiter, 1998, 41).

Fundamentally, economics is a way of thinking. "Due to unlimited human needs and wants, and the universal inability to satisfy those needs and wants with limited resources, all people are forced to make choices. Economic decision-making, then, is a necessary skill for individuals to develop in every society" (Jenkins & Nelson, 2001, 1). "The inclusion of economics as a core subject in the goals 2000 Educate America Act recognizes the value of economic understanding in helping people comprehend the modern world, make decisions that shape their futures, and strengthen major institutions" (NCEE, 1998).

Therefore, the purpose of this study was to collect baseline data concerning the current status of economic understanding among young children in Southeast Idaho. The data were collected and analyzed to measure the natural maturation of students' understanding of economics, as integrated into the curriculum by the teacher.

Ultimately, these data can then be utilized for: (1) developing economic education programs that incorporate standards based instruction and curriculum; (2) providing data-driven teacher training; and (3) ultimately, to enrich the curricula with economic concepts, vocabulary, and real-life applications.

LITERATURE REVIEW

Economics is the science of choice. Children make economic decisions continually. Economics is everyday life! It is a unique way of thinking, placing emphasis on human behavior, values, beliefs, and the decision-making process (Morton, 1997). Students in intermediate grades are at an age during which economics is becoming a more obvious and important part of their lives. Consumer expenditures by students at these grade levels are already large and growing; they are making choices each time they enter the marketplace.

The National Council on Economic Education's Campaign for Economic Literacy continues to:

> *Envision a nation of people who have the knowledge, understanding and skills to make informed economic choices; students who possess economic ways of thinking and problem-solving that they can use in their lives as responsible consumers, producers, savers and investors, and effective participants in a global economy; employees who understand economic concepts and economic ways of thinking and are better able to make informed decisions in their personal finance, in the workplace and as citizens.* (NCEE, 1999 [on-line])

Economics is a required course for high school graduation in only thirteen states. Not requiring economic education or postponing it until the eleventh or twelfth grade may: (1) miss students who have dropped out, and (2) deny the few who take economics in high school many prior years of pertinent and meaningful economic related content, and experience. In order to stop this trend, "We need to know something about what economics students [junior high and elementary grade] levels know, what they can learn, and what they are taught" (Walstad & Soper, 1991, 117).

According to the National Council on Economic Education *Guide to Economic Standards,* "the Standards in economics offer help to raise the quality of economic education in America's schools so that children can fully and effectively participate in the complex global economy they will inherit" (NCEE, 1998). Furthermore, "Nations that establish national standards do so to insure equality of education as well as higher achievement, because they make explicit what they expect children to learn to insure that all children have access to the same educational opportunities" (Ravich, 1998, 1).

Standards fulfill a promise; a promise that students will be able to function in a society with a comprehensive, integrated set of decision-making concepts. Individuals making choices drive an economy, and ultimately, a society. The intent of instruction and curriculum based on national standards is that these choices will more likely be reasonable and sound (NCEE, 1998).

METHODOLOGY

The Idaho State University Center for Economic Education administered the Basic Economics Test (BET), as a pre- and post-test, to 5th grade students in school districts of Administrative Regions 5 and 6. The BET is one of five nationally normed and standardized tests of economic literacy published by the National Council on Economic Education (Walstad & Robson, 1990). It is designed to measure the economic understanding of intermediate elementary students. The economic content of the BET is based upon the second edition of the *Framework for Teaching the Basic Concepts* (Saunders, et al., 1984) of the *Master Curriculum Guide in Economics.*

Permission to conduct this research study was granted by the Human Subjects Committee at Idaho State University, and by school superintendents and parents within each participating district. Eighteen of 33 school districts in Southeast Idaho agreed to participate. Over 1000 students in 54 classrooms (pre-test n =1328; post-test n =1192) were tested and contributed to the collection of baseline data. The instructions from the standardized test were read orally, and the average duration of each student's participation was 30 minutes. Participation was voluntary and refusal to participate involved no penalty or loss of benefits. There were no apparent risks to involvement in the study, and individual names were kept anonymous. Results of the BET testing were recorded in such a manner as to support anonymity.

RESULTS AND DATA ANALYSIS

The BET is a 29-item, multiple-choice test. Students selected their choice from four possible answers for each question. Data from the BET, pre- and post-test, were grouped and summarized by test question. To date, only five out of twenty-nine test questions have been analyzed. The valid percent of students who answered each test question correctly was reported for both the pre-test and the post-test. The percent improvement was also calculated and recorded.

Question #1 - "What does scarcity mean?" had the highest percent improvement (valid percent = 48%) between the pre- and post-test of the five

test questions analyzed. Question #4 had the lowest percent improvement (valid percent = 4.9%) between the pre- and post-test. All five items analyzed showed improvement between the pre- and post-test. The data were summarized and grouped as illustrated in Table 1.

Table 1
Basic Economics Test for 5th Graders

Fundamental Economic Concepts Questions	Pre-Test Valid %	Post-Test Valid %	% Improvement
#1 Scarcity means?	9.0	57.0	48.0
#2 Why do people make economic choices	24.0	37.0	13.0
#3 What is opportunity cost?	26.3	32.8	6.5
#4 In a market economy, which group has the most influence on what is produced?	19.1	24.0	4.9
#5 A bank pays you for saving your money. What is this payment called?	13.1	42.8	29.7
Pre-test (n = 1328) Post-test (n = 1192)			

IMPLICATIONS AND RECOMMENDATIONS

Although this was only an initial test to collect baseline data concerning the economic literacy of young children in southeast Idaho, three major implications have resulted: (1) standards based instruction and curriculum must be presented as early as possible in the elementary grades; (2) teachers must be trained in the economic concepts and the standards in order to present said curriculum to their students; and (3) economics can enrich teaching and learning via integration across all curricula and in all grade levels.

The benefits of this research study are clear: (1) the Center for Economic Education has obtained essential feedback that will lead to improved economic education programming for school districts within Regions 5 and 6 (the university service area); (2) the results of the research

will be made available to researchers, educators, The Idaho Council on Economic Education, and the National Council on Economic Education; (3) the College of Education at Idaho State University will receive the results to provide NCATE (National Council for Accreditation of Teacher Education) with an updated perspective of service and collaborative efforts with schools; and (4) research data collected during the project will be utilized for additional purposes such as teacher training and workshop presentations.

In summary, these data generated conclusions that continue to support the need for standards based instruction and curriculum in economic education. Ninety-six percent of Americans believe economics should be taught in the schools (Brenner, 1999). The time is now to work toward that goal -- with K-12, standards based programs! The research question that must now be addressed is "can the economic literacy levels be enhanced even further through 'implementation of teacher training on, and classroom integration of, standards based instruction and curriculum BETWEEN the pre- and post-test."' These are the initial steps in the plan to evaluate, develop and ultimately, improve economic literacy in Southeast Idaho.

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THE ECONOMIC ATTITUDES AND VALUES OF YOUNG AMERICANS: A CASE STUDY OF FUTURE BUSINESS LEADERS OF AMERICA

Inder P Nijhawan, Fayetteville State University
Richard Ellis, Fayetteville State University

ABSTRACT

This study measured the economic attitudes and values of a random sample of young Americans (high school seniors and future Business Leaders of America members (FBLA)) towards the American Economic System and its essential elements: profits, economic freedom, competition, corporate taxes, business ethics, advertising, and labor unions. The study suggested that the respondents (FBLA members) demonstrated less than affirmative attitudes toward economic and business issues than one would expect based on their training and economic education.

INTRODUCTION

Young Americans' attitude toward the economic issues is an important determinant of the future of the private enterprise system. In a society where political and economic decision - making is decentralized, the right and responsibility to make decisions rests with individuals. Competent economic policies are, therefore, a function of economic understanding and attitudes of the masses toward profits, economic freedom, competition, government intervention, taxes, business, and the right to work.

Attitudes are widely accepted as a precursor of human behavior. According to Kunkel (1970),

> *Attitude, thus, is simply a shorthand term for certain abstracted characteristics common to a number of behavior patterns which are frequently repeated whenever certain conditions prevail (p.70).*

McClelland (1969) endorses Kunkel's assertion when he equates attitude with "the probability of recurrence of behavior forms of a given type and direction." Since attitudes predict actions (particularly in the voting booth), a study of young Americans attitudes may offer some insights into future economic policies and their impact on the American economic system.

LITERATURE REVIEW

Studies of attitudinal change in the area of economics are limited in number and scope. This shortcoming stems partly from the fact that until recently there was no widely accepted nationally normed attitudinal test instrument available for research. Jackstadt and Brennan (1983) were among the first to study the economic knowledge level and attitude of high school students toward the American Economic System, business and labor unions. They were surprised to find not only a profound lack of understanding of the American system, but also downright hostility toward its important institutions.

Charkins, O'Toole and Wetzel (1985) studied how student learning and attitudes could be improved by matching instructional style with student learning style. Using factor analysis, the authors explored the relationship between student score on attitude and expected grade, hours of study, percentage change in Test of Understanding College Economics (TUCE) score and the extent of difference in learning style and teaching style scores. They conclude that the students' learning and attitudes could be improved by developing instructional strategies that match with students' learning styles.

Hodgin (1984) developed an econometric model to study how performance information (as reflected in cumulative grade) affected changes in attitude, which in turn determined performance. Hodgin found that there

is an interactive relationship between the students' attitudes and cognitive learning.

Ingels and O'Brien (1985) studied how learner's attitudes and values were influenced by instruction based on the textbook entitled, Our Economy: How it Works. They used the University of Chicago, Social Science Research Center's Economic Values Inventory instrument to measure student attitudes (the findings of the study are included in our discussion of the national sample).

In a subsequent study, O'Brien and Ingels (1987) used the Economic Values Inventory test to measure the instructional effectiveness of an economic course of study on the attitudes of younger adolescents. They claimed that the Economic Values Inventory test of attitudes satisfied acceptable standards of reliability and construct validity. They recommended the use of the test in economic education research.

Grimes et al (1989) examined the attitudinal change caused by the "Economics USA" courses by regressing attitude formation on economic learning, general learning, expectations, student efforts, demographics, and course format. The authors concluded that although Economics USA courses enhanced students' learning, they did not change the negative attitude of the students toward a televised course.

Walsted and Soper (1989) used nationally normed pre - and - post - cognitive test data to explore how students' attitudes and economic understanding were affected by the type of course, student and teacher characteristics and school district's commitment to economic education. The authors concluded that students' learning and attitudes were positively related to teacher's knowledge level, school system's commitment to economic education and pure economics courses (as opposed to courses in which economic concepts are infused, such as social studies and consumer economics).

Marlin (1991) measured the effect of state - mandated economic education on teacher attitudes and its effect on student performance. Using a National Assessment of Economic Education data bank, Marlin concluded that state mandates had a negative effect on teachers? attitude (and hence on students' performance) unless accompanied by teacher training.

Phipps and Clark (1993) extended the Walsted and Soper study further by applying factor analysis to student economic attitudes. They used seven orthogonal attitude variables instead of summed attitude scores to further gain insights into the interaction between cognitive and affective learning.

Frey et al (1993) investigated how the attitudes of economics students differed from that of the general population. They attributed differences in attitudes to the characteristics of the students who chose to study economics rather than to the education they received. Agarwal and Day (1998) showed how the Internet had a positive influence on student retention of economic concepts and attitudes toward economics.

RESEARCH ISSUE

The current study investigated economic attitudes and values of a random sample of the North Carolina seniors and Future Business Leaders of America students using a nationally normed Economic Values Inventory test. Future Business Leaders of America (FBLA) is a national youth organization for secondary school students enrolled in business subjects which include a fair amount of economic content. Business courses encompass a vast majority of the micro and macroeconomic concepts identified in the National Economic Standards and include specific competencies requiring an understanding of the free enterprise economy and the role of business in it (Tannenbaum,1994). FBLA is designed to increase business knowledge and acumen and develop competent business leadership among its members. The FBLA has several objectives. One of the objectives is to actively encourage interest in and understanding of the American enterprise system. It seeks to reward students who "develop projects to increase understanding and support of the American enterprise system within the school and/or community by developing information/education programs," (North Carolina State Department of Public Instruction, FBLA Guidelines page 7).

HYPOTHESIS

Considering the time and efforts expended on FBLA activities, and FBLA avowed objectives, it is expected that high school students who are members of the FBLA will have higher mean scores on the Economic Value Inventory Test (a measure of attitudes toward private enterprise and its concomitant) than the mean score of non - members of FBLA. Therefore, the null hypothesis was stated as follows: There is no difference in economic value inventory test mean scores between high school students who are FBLA members and those who are non - members of FBLA.

METHODS

Performance in the affective domain was measured by the Economic Values Inventory Test (EVI) developed by the Social Science Research Center at the University of Chicago. The instrument was tested with a diverse national sample of 850 secondary students. It has proven construct and content reliability and, therefore, validity for research (O'Brian, 1987).

The initial survey consisted of 250 items. The number of items was reduced to 45 through the application of factor analysis. The eight (8) EVI scales, scale means, reliability and factor loading of individual items meet and in some cases exceed the required standards -- Cronbach - alpha ratio of a minimum .50. (O'Brian,1987).

The aforementioned instrument was administered to a random sample of 363 high school seniors in North Carolina and 350 FBLA members. The respondents were drawn from all of the North Carolina education districts. In order to ensure the inclusion of smaller and less financially endowed units, the schools were classified into type A and type B institutions. Type A institutions were secondary schools with a graduating class of 250 students or more. A senior class of 249 pupils or less was categorized as a Type B institution. Using random numbers, five (5) large and five (5) small schools were selected from the education districts.

Performance in the affective domain was measured by the Economic Values Inventory Instrument (EVI) mentioned earlier. The instrument has

eight (8) EVI scales. Each of the scales is designed to measure a thematic area of economic attitudes. The explanation for each of the EVI scales is provided in the next section.

RESULTS

How did the EVI scores of FBLA respondents compare with that of the North Carolina Seniors and the national sample?

Table 1 compares the EVI scale scores of the aforementioned groups. The national sample consisted of 850 high school seniors randomly selected from different high schools in inner-city, sub - urban and rural schools. The national sample is included for informational purposes only. (Table 1 on the next page)

It is evident from table 1 that the Economic Values Inventory test scores of FBLA respondents were statistically significantly different from those of North Carolina seniors in Scales 1,3,4,5,6, and 8.

Scale 1 of the EVI focused on the respondents' support for the American economic system and its ancillary: profits, economic freedom and competition, need for saving, and importance of productivity as a determinant of standard of living. A Low score in this category would suggest respondents' lack of support for the American private enterprise system and its essential elements. he FBLA respondents did not affirm their support for the American Economic System (and its correlative elements: profits, hard work, occupational freedom, and competition) as strongly as the North Carolina seniors and the national sample. On a scale of 1 to 7, where 1 was "strongly disagree" and 7 was "strongly agree" the FBLA respondents had a mean score of 5.35 as compared to 5.61 and 5.40 for the North Carolina seniors and the national sample, respectively.

Table 1: Mean Score on the Economic Values Inventory (Evi) for the National Sample, North Carolina High School Seniors, and Future Business Leaders of America Respondents

		National Sample x	NC High School Seniors x	NC Future Business Leaders x
SCALE 1:	The American Economic System (Support for the Economic System)	5.40	5.61	5.35 (4.65)***
SCALE 2:	Business (Trust in Business)	4.70	4.71	4.78 (.96)
SCALE 3:	Psychological-Personal Efficacy (Alienation & Powerlessness)	2.80	2.70	2.88 (2.18)**
SCALE 4:	Government Role in Social Welfare (Government is Responsible)	4.90	4.46	4.59 (1.82)*
SCALE 5:	Government Role in Setting Prices (Against Government Role)	4.00	4.18	3.94 (2.31)**
SCALE 6:	Unions (Against Powerful Unions)	4.60	4.60	4.24 (4.75)***
SCALE 7:	Treatment of Workers (Workers' Treatment is Fair)	3.10	3.32	3.23 (.96)
SCALE 8:	The Economic Status Quo (Against the Distributive Status Quo)	4.80	4.42	4.65 (3.10)***

Note: *Significant to the 0.10 level or better, one tailed test
**Significant to the 0.05 level or better, one tailed test
***Significant to the 0.01 level or better, one tailed test
(t statistics are reported in parentheses below Future Business Leaders)
N: National Sample - 850
North Carolina - 363
Future Business Leaders - 350

Scale 2 consisted of statements designed to gauge the respondents' perception of the image of the American businesses. Respondent's views were sought regarding corporate taxes, business ethics, advertising, and the need to expand the business role in decision-making. High scores in this scale would affirm respondents' distrust of the business. The FBLA

respondents did, however, moderately affirm the public responsibility of business, the desirability of greater voice of the business community in government, and the importance of lower corporate taxes. The FBLA respondents mean score of 4.78 is not, however, statistically significantly different from the North Carolina seniors and the national sample.

Scale 3 was designed to investigate the psychological orientation of the respondents. It measures the strengths and weaknesses of the respondent's belief in an individual's ability to control his/her destiny and whether the economic system is exploitive in nature. A high score in this category would indicate that the respondents feel powerless and alienated from the system. One would expect that the FBLA respondents would emphatically reject scale 3. However, their rejection of scale 3 with a mean score of 2.68 compared to 2.70 and 2.80 respectively for the North Carolina seniors and the national sample is not statistically insignificant.

Scale 4 addressed the issue of the social responsibility of the government and assessed respondents' views on whether the individual or the society is responsible for unemployment and poverty in the system. A high score in this category would indicate respondents' affirmation of the social responsibility of the government. All groups failed to consider the possibility of a conflict between the free enterprise system (Scale 1) and the role of the government in providing a safety net for the unfortunate. Contrary to expectations, the FBLA respondents' mean score of 4.59 indicated that they were more supportive of government social welfare responsibility than the North Carolina seniors.

Scale 5 dealt with the role of government in price setting. Low scores in this category are indicative of respondents' lack of support for government control of prices. The FBLA respondents seem to be neutral on this issue with a mean score of 3.94 compared to 4.18 and 4.00, respectively for the North Carolina seniors and the national sample.

Scale 6 polled the respondents regarding their views on labor unions. A high score in this scale would indicate that the respondents are against powerful labor unions and would like to see their influence reduced. An overall mean score of 4.24 for the FBLA respondents compared to the mean score of 4.60 for both North Carolina seniors and the national sample

indicated that the FBLA respondents were only moderately opposed to strong labor unions in our economy.

Scale 7 was concerned with whether or not workers are treated fairly. A low score in this category would be indicative of respondents' agreement with the unfair treatment of workers by businesses An overall mean score of 3.23 for the FBLA respondents indicated that they moderately disagreed with the statement that our system is exploitive.

Scale 8 deals with income distribution and equality of opportunities in our society. A high score in this category would indicate that respondents agree that income and opportunities are unequally distributed in the society. The FBLA respondents with a mean score of 4.65 affirmed that there is unequal income distribution in our society and that there is a need to change the status quo.

SUMMARY AND CONCLUSIONS

The avowed objectives of the FBLA are to enhance business knowledge and skills and to promote business leadership among its members. It encourages an interest in and understanding of the American private enterprise system. While the FBLA also has other organizational objectives, its focus on promoting an understanding of and appreciation for the American Private enterprise system is laudable.. More so, because the research shows that performance in the affective domain may be influenced by success in the cognitive area (Grimes,1989).

This study suggested that the FBLA respondents demonstrated less affirmative attitudes toward economic and business issues than the North Carolina seniors and the national sample. The economic attitudes of the FBLA respondents are surprising, considering their moderate support for the American enterprise system, moderate affirmation of support for and trust in business, liberal attitude toward the role of government in price setting and income distribution, surprising affirmation of the unfair treatment of the workers, and moderate opposition to strong labor unions.

It is ironic that the attitudes described above afflict the next generation of potential business people who are beneficiaries of the

experiences that are designed to promote a better understanding of and appreciation for the private enterprise system.

IMPLICATIONS/RECOMMENDATIONS

Attitude formation is a complex process, which is influenced by a variety of student characteristics and socio-economic variables. These variables could include, race, sex, parental education, marital status of the parents, number of hours spent watching television, magazines/newspaper read, grade point average in business and economics courses, number of hours student is employed, and membership in an organization. As a sequel to this paper, it would be interesting to formulate a regression model incorporating some or all of the aforementioned variables to explain the difference in attitudes of FBLA students and the North Carolina seniors. It is evident, however, that since organization membership is only one of the many variables that determine attitudes, FBLA cannot by itself shape attitudes of its members. However, more emphasis on entrepreneurial activities and a balanced and unbiased discussion of business and economic issues may be helpful.

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CAMPUS, ONLINE, OR HYBRID: AN ASSESSMENT OF INSTRUCTION MODES

Neil Terry, West Texas A&M University
Joshua Lewer, West Texas A&M University

ABSTRACT

This paper presents empirical results concerning the effectiveness of campus, online, and hybrid instruction in economics. The sample consists of graduate students enrolled in macroeconomic theory or international economics courses at a regional university. Assessment of enrollment, attrition, grade distribution, faculty evaluation, and course evaluation across the various instruction modes is presented. Holding constant ability, effort, and demographic considerations, students enrolled in the online course scored over six percent lower on the final exam than campus students and four percent lower than hybrid students. There is not a statistically significant difference between student performance on the final exam between campus and hybrid modes.

INTRODUCTION

There is little doubt that the online mode of instruction has become a major part of higher education and an important strategic issue for business schools. The U.S. Department of Education estimates that 100 new college courses are added to the online format each month (National Center for Education Statistics, 2001). In recent years, the efficacy of online instruction has been debated in the literature as the mode has become ubiquitous (Lezberg, 1998; Okula, 1999; Terry, 2000). One alternative to online instruction is the hybrid instruction mode. The hybrid mode combines some

of the inherent features of the online (e.g., time independence) and campus (e.g., personal interaction) environments. The purpose of this paper is to compare student satisfaction and performance in the campus, online, and hybrid instruction modes. Standard assessment and regression techniques are employed. The research is based on graduate courses in macroeconomics and international economics at a regional university. The paper is organized as follows: First, an overview of concepts and definitions important to distinguishing the three instruction modes is provided. The next section presents assessment information relating to enrollment, attrition/drop rate, grade distribution, and student evaluation of faculty and course. Third, an empirical model testing the effectiveness of instruction mode while controlling for effort, ability, and demographic considerations is developed and employed. The final section offers conclusions and implications.

BACKGROUND

The fundamental characteristics of the campus, online, and hybrid instruction modes are not universally agreed upon. The authors acknowledge this lack of consensus but offer somewhat generic descriptions of each format in order to facilitate the research process. Campus-based or traditional instruction is probably the easiest to understand. The campus mode is characterized by student/faculty interaction via lectures, discussion, and exams on campus at scheduled times and days. There is approximately forty-five contact hours associated with a three credit hour course in most traditional campus courses. The personal interaction between students and faculty associated with campus courses is often perceived as a characteristic that facilitates high quality learning. In addition, most professors were educated via traditional campus instruction and are familiar with the learning environment from the perspective of student and instructor.

The online mode of instruction replaces the walls of the classroom with a network of computer communication. Some of the benefits of online instruction are its temporal, geographic and platform independence, and its simple, familiar and consistent interface. Some of the drawbacks are:

sophistication and creativity restricted by hardware and software compatibility; resistance to shift to new and alternative teaching and learning paradigms; privacy, security, copyright, and related issues; and a lack of uniform quality (McCormack and Jones, 1998). Online instruction is heralded for providing flexibility for students in that it reduces the often-substantial transaction and opportunity costs associated with traditional campus offerings. This flexibility in structure is countered by potential problems including lack of personal interaction (Fann and Lewis, 2001), the elimination of a sense of community (James and Voight, 2001), and the perception of lower quality (Terry, 2000). In addition, faculty often have reservations about preparing a new online course because of the large initial time investment involved, estimated to be at 400-1,000 hours per course (Terry, Owens and Macy, 2000).

Not all students can take campus courses and not all want online instruction. The general problem with campus courses for working professionals is the time constraint, while the most common complaint about online courses is the lack personal interaction between students and professor that is often needed to facilitate the learning process, especially for advanced coursework. The hybrid mode is a potential solution that combines the positives from both modes. There are approximately eighteen to twenty-five contact hours associated with a three credit hour course. The decreased classroom contact time is offset by computer-based communication, which includes lecture notes, assignments, and e-mail correspondence. The hybrid mode allows busy graduate students and working professionals limited in class time, while maintaining an adequate amount of contact time with faculty and peers. The obvious criticism of the hybrid format is the potential that the instruction mode does not combine the best attributes of the campus and online formats but the worst attributes. The potential negative attributes of hybrid instruction include a feeling that there is an inadequate amount of time to cover lecture topics, double preparations for the instructor because the mode requires both lecture and online materials, and a lack of time and geographic flexibility with respect to the campus lecture component.

Results from this study are derived from 327 graduate business students enrolled in economics courses in the years 1998-2002. The study

cohort consists of 99 campus, 134 online, and 94 hybrid students from two graduate sections of macroeconomic theory and two sections of international economics in each instruction mode, a total of twelve courses. Every effort was made to keep the content and course requirements consistent across the three instruction modes in order to make multiple comparisons viable. Half the student grade in each course is determined by homework assignments and the other half of the grade is determined by a proctored final exam. Twenty-five of the original 327 students dropped a course without taking the final exam, yielding a final research cohort of 302. Sixty-four percent of the students in the survey have full-time jobs. Fifty-five percent of the students have at least one child. Sixty-five percent of the sample population is male. Twenty percent of the students are foreign nationals. Eighty-two percent of the students in the survey live within a one-hour drive of campus.

ASSESSMENT RESULTS

Table 1 presents a multiple comparison of instruction modes across the common assessment criteria of enrollment, attrition/drop rate, grade distribution, student evaluation of faculty, and student evaluation of courses. The last three assessment variables are measured on a standard 4.0 scale, where 4.0 is the highest possible grade or score. Statistical differences in means are tested by employing a Kruskal-Wallis test for multiple comparison (Conover, 1980). The Kruskal-Wallis test is employed because it offers the most powerful test statistic in a completely randomized design without assuming a normal distribution. The results indicate average enrollment for the online instruction mode is significantly greater than the campus or hybrid alternatives. Because students have the option of enrolling in the instruction mode of his/her choice, the enrollment numbers imply the demand for the online mode is relatively high. Average enrollment for the online mode was over thirty-five percent higher than the alternative modes. The results imply the convenience associated with online instruction is attractive to the study cohort.

Table 1: Multiple Comparison of Instruction Modes			
	Campus	Online	Hybrid
Sample Size	99	134	94
Average Enrollment	24.75	33.5*	23.5
Attrition/Drop Rate (percent)	4.04*	9.70	9.57
Class Grade Distribution (4.0 scale)	3.56	3.19*	3.52
Faculty Evaluation (4.0 scale)	3.62	3.20*	3.58
Course Evaluation (4.0 scale)	3.49	3.09*	3.51
* Indicates statistically different than the other two instruction modes at $p<.05$			

Attrition/drop is defined in this study as the difference between the number of students officially enrolled in the course on the first class day versus the number officially enrolled on the last class day. The results indicate a clear difference in attrition/drop rates across the instruction modes. The campus attrition rate of 4.04 percent is significantly lower than the online and hybrid rates of 9.70 percent and 8.51 percent, respectively. One possible explanation of this result is that student/faculty personal interaction is an important component in student retention. The fluidity and independence associated with the online mode might also result in a relative ease of exit. It is interesting to note that attrition for the hybrid mode is lower than the online mode, although the difference is not statistically significant.

The third assessment variable in the study is class grade distribution. This broad measure of student performance indicates that the research cohort earned significantly lower grades when completing coursework in the online format. The grade distribution for the hybrid mode is approximately the same as the campus mode. In general, it appears that the online format is inferior in quality based on relative student performance, although a more rigorous methodology with control variables should be employed before any broad conclusions can be reached. The results are tempered by the

observation that faculty might be more inclined to give students the benefit of the doubt with respect to grading as the level of personal interaction increases. It is also possible that students selecting the campus or hybrid modes are more concerned about faculty and peer contact as a means of ensuring quality control. Students that prioritize the perception of higher quality might simply be more serious and successful with respect to classroom performance. Hence, the results might be biased by higher quality students self-selecting the campus and hybrid modes. Another possible explanation is that students that enroll in campus or hybrid courses tend to have lifestyles without excessive time rigidities, which might lead to opportunities to study more and earn higher grades.

The last two assessment terms in Table 1 are student evaluations of faculty and course. The results indicate that student evaluations of faculty and course are significantly lower for the online format than the campus or hybrid alternatives. The implication is that students are not as satisfied with online instruction. An obvious reason for the result is the potential confounding effect caused by the lower grade distribution. The lack of direct personal interaction is another possible reason students evaluates the online professor and courses relatively low.

MODEL AND RESULTS

The assessment results from the previous section provide a broad multiple comparisons of the campus, online, and hybrid instruction modes. The purpose of this section is to compare the effectiveness of the instruction modes employing a more rigorous methodology. Davisson and Bonello (1976) propose an empirical research taxonomy in which they specify the categories of inputs for the production function of learning economics. These categories are human capital (admission exam score, GPA), utilization rate (study time), and technology (lectures, classroom demonstrations). Using this taxonomy, Becker (1983) demonstrates that a simple production function can be generated which may be reduced to an estimable equation. While his model is somewhat simplistic, it has the advantage of being both

parsimonious and testable. There are a number of problems that may arise in this type of work (Chizmar & Spencer, 1980; Becker, 1983). Among these are errors in measurement and multicollinearity associated with demographic data. Despite these potential problems, there must be some starting point for empirical research into the process by which economics is learned if we are to access various proposals as to how economics knowledge may best be imparted to our students.

Assume that the production function of learning for economics at the college level can be represented by a production function of the form:

$$(1) \qquad Y_i = f(A_i, E_i, D_i, X_i),$$

where measures the degree to which a student learns economics, is information about the student's native ability, is information about the student's effort, is a [0, 1] dummy variable indicating demonstration method or mode, and is a vector of demographic information. As noted above, this can be reduced to an estimable equation. The specific model used in this study is presented as follows:

$$(2) \qquad SCORE_i = B_0 + B_1ABILITY_i + B_2HW_i + B_3NET_i + B_4HYBRID_i + B_5AGE_i + B_6FOREIGN_i + u_i.$$

The dependent variable used in measuring effectiveness of student performance is score (SCORE) on the comprehensive final exam. The variable associated with the final exam score is measured in percentage terms. The proxy for student's native ability (ABILITY) is based on the composite score of the GMAT exam plus the product of twice the upper-level (last 60 hours) undergraduate grade point average (GPA). For example, a student with a GMAT score of 600 and 3.5 GPA would have a composite score of 1300. Many business colleges use the composite score as part of the admission process. The percentage score on the homework assignments (HW) measures student effort. The homework grade is used to measure effort since students are not constrained by time, research material, or ability to ask the course instructor questions when completing the ten course

assignments. Enrollment in a campus, online, or hybrid course is noted by the categorical variables NET (online course) and HYBRID.

The choice as to what demographic variables to include in the model presents several difficulties. A parsimonious model is specified in order to avoid potential multicollinearity problems. The demographic variables in the model relate to student age (AGE) and nationality (Foreign). The age variable is included in the model based on anecdotal evidence that distance learners are more mature and self-motivated (Kearsley, 1998; Okula, 1999). The model corrects for international students because the majority of international students in the MBA program elected to enroll in the campus course instead of the Internet class. Specifically, only nine international students completed the Internet course while forty-nine completed a campus course. While other authors have found a significant relationship between race and gender and learning economics (Siegfried & Fels, 1979; Hirschfeld, Moore, & Brown, 1995), the terms were not significant in this study. A number of specifications were considered using race, gender, MBA emphasis, hours completed, and concurrent hours in various combinations. Inclusion of these variables into the model affected the standard errors of the coefficients but not the value of the remaining coefficients. For this reason they are not included in the model. University academic records are the source of admission and demographic information because of the potential biases identified in self-reported data (Maxwell & Lopus, 1994). There are a total of 327 students in the initial sample, 25 students being eliminated from the study for dropping a course (Douglas & Joseph, 1995).

Results from the ordinary least squares estimation of equation (2) are presented in Table 2. None of the independent variables in the model have a correlation higher than .31, providing evidence that the model specification does not suffer from excessive multicollinearity. The equation (2) model explains 55 percent of the variance in final exam performance. Three of the six independent variables in the model are statistically significant. Of primary interest is the negative and significant coefficient associated with Internet instruction. Holding constant ability, effort, and demographic considerations, students enrolled in the Internet course scored over six percent lower on the comprehensive final exam. The empirical results

provide evidence supporting the inferior quality criticism of Internet-based learning. The six-percent quality differential is not surprising since the mode is relatively new. It is reasonable to expect the quality gap between the campus and online instruction modes to narrow over time as faculty gain experience in the online environment and technological advances improve mode efficiency. Interestingly, the coefficient corresponding to the hybrid mode reveals that student scores on the final exam are two percent lower than the campus alternative but the coefficient is not statistically significant. The student performance results verify the grade distribution assessment results of the previous section as the campus and hybrid modes are shown to be approximately the same but significantly higher than the online instruction mode. Hence, the hybrid mode appears to supply quality that is equivalent to the campus mode with more time independence and flexibility.

Table 2: Estimation of Equation (2)

Variable	Coefficient	t-statistic
Intercept	-43.4826	-2.04*
ABILITY	0.0315	3.99*
HW	0.9466	4.16*
NET	-6.1551	-4.34*
HYBRID	-2.0131	-1.77
AGE	0.1045	0.87
FOREIGN	1.1212	0.55

Notes: R-square = .55, F = 26.68, *p<.05, and n = 302.

The stability of the model's other coefficients implies that the model is somewhat robust. Ability as measured by the admission GMAT and GPA composite score has a positive and significant impact on final exam performance. Student effort as measured by percentage score on homework assignments yields a positive and significant coefficient. The effort variable

does not accurately measure the amount of time that a student applied to the course since productivity is different across students and it is impossible to determine the length of time each student spends on a course homework assignment. The effort variable is more of a proxy for willingness to work until complete and adequate homework answers are obtained, organized, and presented to the course instructor. Certainly, ability and effort should be positively related to final exam performance in a random sample of college courses. The two demographic variables in the model have positive coefficients but are not statistically significant. Hence, age and nationality does not have a significant impact on final exam performance for the research cohort in this study.

CONCLUSIONS AND IMPLICATIONS

This study compares the online, campus, and hybrid modes of instruction. The research results indicate that the pure form of online instruction is the least preferred. Specifically, student performance, faculty evaluation, course evaluation were all significantly lower for the online mode of instruction compared to the campus and hybrid alternatives. The results should not be viewed as an indictment of online instruction since the format is still in the initial stage of development. It is almost certain that the gap in student satisfaction between online and campus courses will continually narrow as new technology and faculty sophistication in the environment improve over time via the learning by doing process. For institutions and faculty not willing to fully commit to the online mode at this point, the hybrid mode is a viable alternative that offers some flexibility but maintains the highest quality and student satisfaction. Retention is the only assessment area where hybrid is significantly worse than the campus format. Overall, it appears that personal interaction and community are an important part of the education experience. The hybrid mode provides a transition between campus and online, maintaining some level of physical interaction. Holding constant factors such as innate ability and effort, graduate students completing course in the hybrid mode tested at a level equivalent to the

campus mode and significantly higher than the online mode. The results of this study are of a preliminary nature. Further research is needed before any definitive conclusions can be ascertained.

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MOCK LABOR RELATIONS AND A GROUP RAWLSIAN EXPERIMENT

William Davis, University of North Carolina at Charlotte
Louis Amato, University of North Carolina at Charlotte
Christie Amato, University of North Carolina at Charlotte

ABSTRACT

Recent contributions to the contract negotiations literature suggest that ultimate contract success is determined by whether the settlement fosters a positive relationship between the parties. Given the adversarial nature of the conventional negotiation process, obtaining an optimal outcome may be difficult. An alternative to the adversarial process is found in the work of Rawls who argues that a just outcome is most likely obtained when individuals choose from behind a veil of ignorance, a situation in which participants negotiate without knowing their future position. The purpose of this research is to test the value of negotiation from behind a veil of ignorance.

Students from Industrial Relations classes conducted mock labor negotiations that determined a significant portion of their grade. Veil of ignorance contracts (students received either management or labor terms) are compared to conventional adversarial negotiations. Main conclusions include a propensity for veil of ignorance negotiations to yield generous pay and health benefits but fewer vacation days as compared to conventional contracts. Students from the veil of ignorance groups emphasized fairness as a learning outcome, while students engaged in conventional negotiations emphasized the realism of the process.

INTRODUCTION

The success of contract negotiations between labor and management extends beyond the signing of a contract. As observed by Holly, Jennings, and Wolters, one criterion for measuring the success of a contract is whether the settlement contributes to a positive relationship between the two parties that fosters its effective implementation on a day-to-day basis (Holly, Jennings, and Wolters, 2001). However, the adversarial nature of negotiations makes obtaining an optimal solution sometimes difficult. Salary and benefit negotiations are generally distributive in nature, yielding a win-lose situation (Walton & McKersie 1965). In the case of wages, for example, one side's gain comes at the expense of the other side. Labor's salary gains come as a result of increased labor costs for management. When issues are distributive, negotiators perceive their interests to be in opposition and behave in a more individualistic rather than in a cooperative manner (Carnevale and Pruitt 1992); sometimes leading to negotiation breakdowns and/or difficulties in successfully implementing a contract once it is signed. Promoting mutually beneficial negotiations in situations where outcomes are perceived to be win-loose offers significant challenges for both management and labor.

Empirical research suggests that trust fosters cooperative negotiations in which negotiators seek to maximize the positive outcomes for both sides through candid discussions of preferences (Pruitt et al. 1983; Ben-Yoav and Pruitt 1984). In fact, Friedman (1992, p. 435) observed that trust is "one factor that is consistently most important" in producing mutual benefit bargaining. Trust supports cooperative negotiators who, according to O'Connor and Carnevale (1997, p.), "develop insights necessary to identify tradeoffs and to craft mutually beneficial outcomes." These insights may challenge a "fixed pie" assumption characteristic of distributive negotiations leading to new opportunities for joint gain. Labor, for example, may be willing to trade salary increases for job security or other benefits that would be less costly for management. Reaching this place of trust may be difficult even for seasoned negotiators.

An alternative to adversarial negotiations is to determine outcomes based upon impartial preferences. Vickrey (1945 and 1960) and Harsanyi (1953 and 1955) both argue that social welfare is maximized when choices are made with an equal probability of being placed in the position of any member of society. Perhaps the best-known work regarding outcomes based upon impartial preferences is John Rawls', A Theory of Justice (1971). Rawls' argues that when choosing from behind a "veil of ignorance", individuals will prefer a society in which any change is to the advantage of the least advantaged member. Rawls' description of the rules for a fair society has been widely cited by scholars from fields as diverse as economics and philosophy. The basis for Rawls' theory is that risk averse individuals, fearing that they may occupy the lowest station, will support redistribution programs that favor the least well off.

The concept of impartial preferences provides a stage for developing trust and building mutually beneficial outcomes in labor negotiations. Participants operating from an "original position" behind a veil of ignorance, negotiate without knowing their own future position. By operating in their own self-interest to assure a beneficial outcome regardless of their future status, negotiators arrive at fair distributions. Members of labor and management negotiating teams, for example, not knowing whether they will retain their current positions or will switch roles, choose impartial preferences that lead to fair distributions of company resources between labor and management rather than preferences that lead to some advantage at the expense of the other side.

Although the philosophical aspects of Rawls' work has found acceptance, most analysts conclude that his ideas are not operationally valid. This lack of operational validity leads critics to question the usefulness of Rawls' ideas as a guiding principle for resolving conflicts. The purpose of this research is to test the value of the "original position" behind the veil of ignorance in a controlled negotiation environment to ascertain its value in producing mutually beneficial labor agreements. Students in an Industrial Relations class participated in mock labor negotiations that determined a significant portion of their final grade in the course. The control groups conducted their negotiations employing standard adversarial management

and labor strategies. Alternatively, treatment groups conducted negotiations from behind a "veil of ignorance" without knowing a priori whether their individual prospects would be governed by the terms awarded to management or to labor.

This research employs a treatment design to investigate the impact on contract outcomes of imposing a "veil of ignorance" on the mock labor negotiations of students in an industrial relations class. Since imposing the condition that a member of an actual labor negotiations team would be assigned to labor or management after the negotiations are completed is unrealistic, this research uses a treatment design to simulate this contrived situation. Ball (1998) documents the usefulness of experiments to test hypotheses that cannot be directly tested with field data. Differences between contracts negotiated using traditional management and labor teams are compared to contracts in which labor and management teams must negotiate lacking specific knowledge regarding the ex post application of contract terms.

METHODOLOGY

During the last week of classes of an Industrial Relations class taught at the University of North Carolina at Charlotte, students are required to negotiate a mock labor/management contract as outlined in Labor Relations (Sloane and Whitney, 1997). During the Fall semester 2000, twelve student teams of three or four students each were divided into six labor and six management teams, allowing for the negotiation of six separate contracts. Three of the six labor-management negotiations utilized traditional adversarial situations. The remaining three negotiations were conducted from behind a "veil of ignorance," with these students being graded on the performance of the labor negotiators or management negotiators, determined at random, after completion of the negotiations. The three traditional negotiation teams serve as the control groups, while the three teams operating behind a "veil of ignorance" serve as treatment groups.

The initial analysis compares differences in outcomes when contracts are negotiated by conventional adversarial labor/ management groups versus

contracts negotiated by labor/ management groups shielded by a "veil of ignorance." Second, the results of surveys completed by students in both the treatment and control groups are evaluated. Students in the treatment group responded to all seven of the following questions, while students in the control group responded only to questions 1-3 and 7. The questions were as follows:

1.	Which team were you originally assigned to? ( ) labor ( ) management
2.	What was your objective in the negotiations? Explain.
3.	Do you think that your particular negotiations produced a contract that was fair? Explain why or why not.
4.	Do you believe that a conventional adversarial negotiation would have produced an agreement that was more or less fair? Explain.
5.	Was your negotiation, given its classroom nature and also the uncertainty of which team you would end up on realistic? Explain.
6.	Do you believe that a negotiation process such as the one you just experienced with uncertainty could be applied to real-world situations? Explain why or why not.
7.	What did you learn from this experience? Explain.

Students in all twelve negotiations were instructed to produce a contract based on six to eight issues from the Sloane and Witney exercise. The most commonly selected issues included length of contract, wage increases, cost-of-living adjustments, paid lunch periods, number of paid holidays, number of paid vacation days, health insurance benefits, whether or not a union member would serve on the board of directors, supplementary unemployment benefits, and retraining programs for laid-off workers. At the end of the negotiating sessions, each labor/management group submitted a signed contract or indicated there was to be a strike. All teams in both the control and treatment groups successfully negotiated a contract.

The results are presented in Tables 1 - 2. In Table 1 below, differences in the negotiated contracts are specified. The results are broken

down into two groups. The middle column contains outcomes of three contracts negotiated in the conventional, adversarial fashion, while the right column addresses the outcomes from the treatment teams negotiating behind a veil of ignorance.

Table 1: Comparison of Outcomes from Three Conventional Versus Three "Veil of Ignorance" Contracts

Issue	Conventional	Veil of Ignorance
Average length of contract for 3 groups	4.7 years	2 years
Average wage increase of 3 groups over length of contract	6.2 percent	11.3 percent
Change in health care cost	Major increases in costs to workers via co-payments and deductibles	Very minor or no increase in costs to workers
Paid vacations	Major increase in number of paid vacation days	Minor increase in number of paid vacation days
Paid holidays	Little or no change	Little or no change

These findings suggest that conventional negotiations result in very different outcomes from contracts negotiated by teams from the treatment group who operated under a "veil of ignorance." The length of contract illustrates a major difference. Management generally prefers a longer length of contract that guarantees a workforce for a longer period of time, thus reducing the cost of additional negotiations. For the conventional negotiations, the length of contract was 4.67 years, while the "veil of ignorance" teams yielded an average two-year contract. Management on the conventional teams in the control group pushed harder and achieved longer contracts than management teams from the treatment group (e.g. "veil of ignorance" teams).

With respect to average pay increases, conventional negotiations resulted in approximately half the average pay raise (6.2 percent) of the treatment group negotiations (11.3 percent)-suggesting that all participants under the "veil of ignorance" wanted to guarantee themselves a large pay raise, regardless of the terms they received at the end of the exercise. Additionally, there were major differences between the two groups with respect to health insurance. Reflecting the soaring cost of health insurance, the conventional negotiators raised the cost of health insurance to employees considerably through co-payments and deductibles, while the treatment group negotiators did not raise the cost of health insurance at all or raised costs by a very nominal amount. The outcomes suggest that both labor and management wanted to guarantee low-cost health care for themselves, regardless of their positions (management or labor) at the end of the exercise.

In the case of paid vacation days, the conventional negotiators increased paid vacation days considerably, while the treatment group negotiators barely increased the number of vacation days. Different outcomes between the conventional and "veil of ignorance" negotiations are somewhat difficult to quantify because increased vacation time in the different contracts varied according to seniority. Contracts differed as to the timing of additional vacation days, depending on seniority at time periods such as 1 year, 2 years, 5 years, 10 years, 15 years, and 20 years. Apparently the union groups behind the "veil of ignorance" did not feel additional vacation days were particularly important and were willing to trade these for more important concerns in the areas of wages and health care. On the other hand, the labor teams in the control group negotiated considerably more liberal paid vacation days. This finding suggests that the union negotiators in the conventional negotiations succeeded in extracting a major concession from management although they were unable to gain major concessions on wages and health care.

Management teams in the control group may have been willing to trade less expensive vacation days for concessions in more expensive items such as wages and health care. The change in the number of paid holidays for both groups remained about the same, with no major differences between the two groups. It could be that the union groups in both the conventional

and "veil of ignorance" groups did not view increases in holidays as terribly important.

Table 2 below provides a comparison of the survey questions answered by the treatment ("veil of ignorance") and control (conventional negotiation) groups.

Table 2: Summary of Questionnaire Results

Objective of negotiation	Treatment Group (n=16)		Control Group (n=15)	
	Management	Labor	Management	Labor
Benefit Labor	0 (0.00)	4 (50.00)	0 (0.00)	2 (28.57)
Benefit Management	2 (25.00)	0 (0.00)	4 (50.00)	0 (0.00)
Benefit Both	6 (75.00)	4 (50.00)	4 (50.00)	5 (71.43)
Produced a fair contract?				
Yes	7 (87.50)	7 (87.50)	7 (87.50)	7 (100.00)
No	1 (12.50)	1 (12.50)	1 (12.50)	0 (0.00)
How are negotiations fair?				
Outcomes are fair	4 (50.00)	6 (85.71)	1 (12.50)	3 (42.86)
Actions are fair	3 (37.50)	0 (0.00)	7 (87.50)	4 (57.14)
Negotiators are fair	1 (12.50)	1 (14.29)	0 (0.00)	0 (0.00)
Were negotiations realistic?				

Table 2: Summary of Questionnaire Results				
Objective of negotiation	Treatment Group (n=16)		Control Group (n=15)	
	Management	Labor	Management	Labor
Yes	1 (12.50)	3 (37.50)	5 (62.50)	6 (85.71)
No	4 (50.00)	4 (50.00)	2 (25.00)	0 (0.00)
Somewhat	3 (37.5)	1 (12.50)	1 (12.50)	1 (14.29)
What was learned?				
Incorporating fairness/compromise	1 (12.50)	4 (50.00)	0 (0.00)	0 (0.00)
Labor negotiations are difficult	3 (37.50)	1 (12.50)	3 (37.50)	2 (28.57)
Negotiating skills	3 (37.50)	1 (12.50)	2 (25.00)	5 (71.43)
How to deal with power	0 (0.00)	2 (25.00)	1 (12.50)	0 (0.00)
Other	1 (12.5)	0 (0.00)	2 (25.00)	0 (0.00)

A comparison of these responses reveals some interesting and somewhat surprising results. First, teams in both the control and treatment groups appear pleased with the negotiations. Team members either suggested that the contract benefited their side of the negotiation or that it benefited both sides. No team member viewed the contract as primarily benefiting the other side. Thus, it is not surprising that both the treatment and control groups believed that the mock negotiations produced a fair contract. More than eighty-seven percent of the teams reported that outcomes (64.3%), negotiating activities (21.4%) or negotiators (14.3%) were fair. When considering the responses of the treatment group teams,

71.4 percent of the student members thought that the Rawls' procedure produced contracts that were fairer than those that would have been produced by conventional adversarial negotiations. The primary reasons cited for the higher degree of fairness were less cooperation in traditional negotiating activities (40%), uncertainty as to the team's final position made this procedure more fair (30%), and the advantage of individual team skills would produce a less fair result in the traditional model (20%).

While treatment group teams believed the group Rawls method produced fairer results, they were less likely to believe that the process is either realistic or applicable to the real world. Students finding the process contrived mentioned that the negotiations were unrealistic because there was more compromise than would be found in a real negotiation (12.5%), the advantage of being fair was unrealistic (25%), the uncertainty of ending team membership was unrealistic (37.5%), and that teams were less demanding (25%). Similarly, these students believed that this methodology would not work in the real world because negotiators would not agree to the uncertainty (44.4%) and because negotiators had a commitment to their own position (44.4%).

The mock labor negotiations lead to several learning outcomes. While five of the sixteen treatment groups mentioned learning to incorporate fairness and compromise, none of the members of the control group mentioned learning fairness and compromise as outcomes of the negotiations. The difficulty of labor negotiations and negotiating skills were two learning outcomes mentioned by both management and labor in both the experimental and control groups. In summary, it appears that students from the control group learned more about the negotiation process and negotiating skills, while the learning outcomes from treatment group members were focused on the importance of fairness and compromise.

CONCLUSION

The purpose of this research project was to compare the outcome of mock labor negotiations conducted under a "veil of ignorance" to conventional adversarial negotiations. Important findings relate to differences in the final contract terms as well as to differences in student perceptions of learning outcomes.

Contracts negotiated from behind a veil of ignorance contained more generous pay and health benefits as compared to the terms of conventional negotiations, but the veil of ignorance contracts provided fewer paid vacation days. It appears that student team members operating under a veil of ignorance wanted to ensure that they would receive adequate pay and health benefits regardless of their ex-post position (labor or management), but accepted fewer paid vacations in order to protect the firm's profit position. Moreover, contracts negotiated from behind the veil of ignorance were shorter in duration as compared to those obtained using conventional adversarial negotiations. Ordinarily, labor prefers shorter contracts in order to reduce the risk that terms will become unfavorable during the life of the contract, while management's preference is for longer contract terms to insure a stable labor force. It appears that the greater uncertainty imposed by the veil of ignorance increased the appeal of shorter contracts among both labor and management negotiators.

Student surveys of learning outcomes suggest that students who negotiated from behind the veil of ignorance learned a great deal about the importance of fairness and compromise, but found little relevance of the exercise in terms of real world negotiations. Alternatively, students operating under conventional adversarial negotiations considered the exercise to be valuable for learning negotiation processes and for developing negotiating skills, but expressed relatively little learning in the areas of fairness and compromise. An interesting extension of this study would be to devise shorter exercises that offer opportunities to experience labor negotiations from both the veil of ignorance and adversarial perspectives. Experiencing the negotiation process from these two very different perspectives may offer students unique

insights into the importance that initial ground rules play in determining outcomes.

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ILLITERATE FRATERNITY: FUTURE PERSPECTIVES

Jack E. Tucci, Marshall University
Richey E. Owen III, Abilene Christian University
Samuel D. Cappel, Southeastern Louisiana University

ABSTRACT

A limited study of student's knowledge about international trade policies revealed that few students are aware of the scope of international trade in general and in the western hemisphere specifically. This ignorance is reinforced by differing special interest groups who seek protectionist measures for their own industries. These same groups campaign on the immediate negative effects of free trade agreements as opposed to the greater positive long run benefits of international trade and cooperation. Mercosur (trade union in South America representing 200 million consumers and a one trillion dollar market) has recently experienced economic difficulties but is expanding its trade relations with other countries. Mercosur is preparing to make an important decision about which international trade organization to join. Although there is building pressure to formalize the Free Trade Agreement of the Americas (FTAA), hurdles exist. As the European Union and the North American Free Trade Agreement partners extend their reach around the world, the Mercosur partners will need to decide which will be most beneficial for them in the immediate term. Hurdles such as currency stabilization, change in governmental policies by member states, labor unions, and most importantly, the economic illiteracy of the composite populations in respective countries will need to be overcome.

INTRODUCTION

One of my daughters (and my) favorite movies is "Sleepless in Seattle" (Arch, 1993). In that movie, Tom Hanks plays the role of a widower (Sam) who has a son (Jonah) that wants Tom Hanks to remarry because of his Sam's loneliness. During the movie, Jonah makes a phone call to a radio talk show and tells about Sam's loneliness. Several hundred female listeners to the talk show feel sorry for Sam and write letters to him expressing their desire to marry him. Jonah shows him a letter they received from a woman in Oklahoma. Sam asks Jonah "Do you know where Oklahoma is?!" Jonah replies "Somewhere in the middle?" Sam says "I am afraid to even think of what they are not teaching you in school!" As academics, we the authors, often feel the same way when we desire to talk about global economic issues. Even simple questions such as "where is Uruguay?" often elicit a response similar to Jonah's "Somewhere in the middle?"

A recent survey of American college students revealed that roughly only three students out of one hundred and seventy (<2%) knew of any other trade agreements other than the North American Free Trade Agreement (NAFTA), the General Agreement on Trades and Tarriffs (GATT), and the European Union (EU). None realized that there are well over 130 trade agreements worldwide, much less the long term positive impacts of free trade among trading partners. However, what was found during the same survey was that progress has been made in these same students' understanding of the benefits of prosperous economies and the resulting stability of their respective national governments .

The general population's understanding is quite different, however, since many depend on age old ideas of market independence, isolationism or even blatant isolationism, rather than understanding the level of market interdependencies (Lee, 2001) . A quick walk through any grocer, even of modest size, and a sample reading of the labels and discovering the point of origin of many products would soon educate many to our interdependence. Many need to ask themselves the following questions; where does my fruit come from in the winter, what is the point of origin for the material in my clothes, and where is it manufactured or sewn? For many who rally around

trade independence, their ethnocentric bias is often carried in a foreign car to the rally, clothed with goods from another country, while standing on a wood platform made from wood imported from a neighboring country.

Even fewer realize how sometimes small changes in an economic policy in one country can nearly decimate a struggling industry in another country. This fact is exacerbated when a majority of the population is ignorant not only of the economic drivers in the foreign country, but are more likely than not, ignorant about the country in general. While a majority (66%) of Americans believe that NAFTA has been great for large organizations, they are ignorant that over 60% of all U.S. based foreign trade is accomplished by firms classified by the U.S. Department of Commerce as being a "small business" (Reynolds, Hay & Camp, 1999; Landers, 1998; Erramilli & D'Souza, 1993).

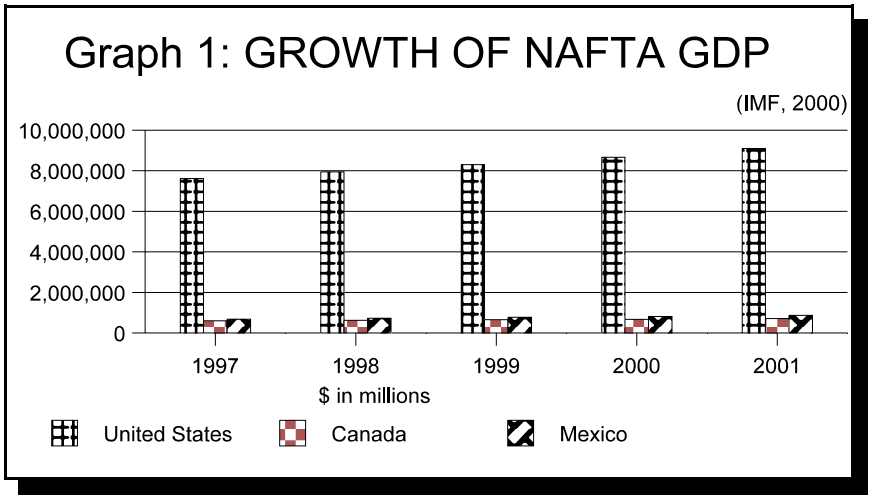
Compounding the ignorance of the long term benefits of foreign trade of the world's population is the turbulence created by the one or two industries that would be struggling regardless of foreign competition. Many times these struggling industries have become lethargic, non-competitive, and are not necessarily meeting the needs of the consumer. Foreign competition brings a new level of awareness to many organizations and that awareness forces them to be more responsive to the consumer. Governments continue to intervene as the U.S. did when Harley-Davidson was struggling, but since that intervention, the quality of choice and product for the consumer has gone up dramatically.

BENEFITS OF INTERDEPENDENCE

The secondary reason most of the general population resist expansion of trade agreements and the opening up of domestic markets to foreign trade, besides ignorance, is the short term perspective of people and the world market. In the short term, free foreign trade without pain in the domestic market is impossible. Nevertheless, many do not see the tenacity of labor markets, instead they only see the short term displacement of labor. Regardless of the "facts," as some would present them, labor is truly only

displaced in a faltering economy (Smith, Magnusson & Wherlen, 2001). The U.S. economy is evidence of this phenomena. When foreign trade is introduced, yes, displacement occurs. Nevertheless, redeployment quickly follows as the economy expands. This is evidenced by very low unemployment rates in the United States during the 1990's after the adoption of NAFTA in 1994. Mixing two economic factors such as (1) economic cycles and (2) the impact of foreign trade to disprove the benefits of interdependence is unfair.

The unfairness in mixing economic issues and global trade effects lies in the fact that long-run implications of foreign trade increases the market strength of both partners as evidenced in the graph 1.



The continuing growth in GDP/GNP of the NAFTA members during this period, especially Mexico, illustrates clearly that free foreign trade builds markets and strengthens the overall economies for all involved (Chappell, 2000). This should be especially true of hemispheric trading partners who are at seasonal opposites to provide balance to the seasonal cycles that typically occurs in a stand alone /isolated economy. Imagine if the local grocer could only sell products grown in-season, in-country? Although obvious to grocers, importers, exporters, and exporting farmers, the benefits to our diets and economy seems to be lost on the general public.

Contributing to peoples fears of interdependent markets for resisting trade agreements and short-term thinking is not accounting for flexibility and adaptability in markets. Anecdotal evidence makes it clear that it may be okay to some for a dominant domestic market leader (such as Wal-Mart) to close domestic competitors out of a domestic market, but an international player proves fearful to the ignorant. This fear stems from the impatience of seeing balance occur after the weaker competitors have been either forced to improve or fail. The news media has reported judiciously on how unions have played this card repeatedly to protect domestic workers when in fact, even after the agreement had been signed, the volume of work performed by foreign workers is statistically insignificant (<1.5% of U.S. GDP) (Smith, Magnusson & Wherlen, 2001). Adaptation occurs over time and people seldom see the present except for the bad, or remember the past except for what was good, while at the same time refusing to see the future for what might be. If organizational change is unsettling to the members of an organization, why should it not be unsettling to the members of society? Nevertheless, international trade has brought great improvements in the standard of living for people all over the world.

Skeptics of the benefits of trade agreements contravene the job creation activity that goes hand in hand with the entrepreneurial climate created by such agreements (Sage ,1993). In the U.S. alone, 87% of all new jobs created are by small entrepreneurial firms (employing less than 250 employees) vying to satisfy the unmet needs of the consumer (Timmons, 1999). The short term perspective again prefers to point out employment displacement over employee redeployment while the longer view looks at the benefits of a larger more stable economic engine capable of weathering downturns in business cycles. Stability in the national and global economy is the driver behind stable governments (Kleinheisterkamp, 2000). Potentially the greatest possible gains for trading countries is the creation of opportunities of entrepreneurship introduced by opening up foreign markets. Articles about management, entrepreneurship, and economics are replete with evidence of first mover advantages for entrepreneurs (Lado, Boyd & Hanlon, 1997). Are countries any different? If countries are to be

entrepreneurial, they must take a first mover approach to establish themselves in the world market in areas where they are competitive.

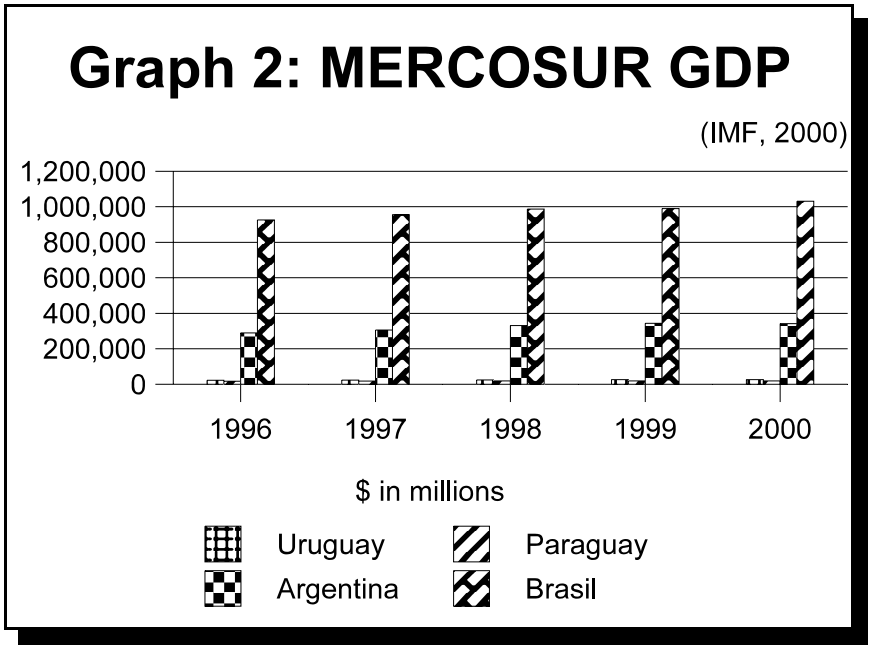
MERCOSUR

The membership of the Mercosur nations is composed of four primary members, Uruguay, Paraguay, Brazil, and Argentina which represent 200 million consumers and a combined economy of over one trillion dollars (Mye & Patagonia, 1996). It has two associate members, Bolivia and a more aggressive international trading partner, Chile which has been leaning towards trade independence more every year. Since its inception, Mercosur has seen continued growth through expansion of joint trade treaties with other countries both near and far such as South Africa (Buscaglia & Long, 1996; WSJ, 2000). There has been many benefits of the Mercosur agreements including normalization of pricing practices and reduction of trade tariffs of the Mercosur members as well. Other benefits include the coordination of products to be traded and the development of specific industries within each of these member states (Osava, 2000).

Mercosur has not been without its problems, especially concerning the stability of the economy in some of the members (Colitt, 2001). The economic instabilities in member economies forced the member governments to dramatically devalue their currencies at different times. Chart 2 clearly illustrates how the gross domestic product has declined as each member has had their share of economic downturns (See Graph 2).

Although alternating poor economies is a hurdle to be overcome, the Mercosur partners have made progress. Changing from a controlled market economy to a free market economy takes time as well as a change in the psychology-philosophy and values of the members societies (Jelin, 2001). As more segments of the economy are privatized, there will be pockets of success as well as failure. One of the brighter spots of success in the Mercosur member countries is the digital phone systems which they now enjoy. This relatively recent change is a direct result of opening up a typical state controlled business to free market forces. Today, Mercosur members

enjoy one of the best digital phone systems in the world, far surpassing large regions of the United States in phone communication quality and in data transmission.



NORTH AMERICAN FREE TRADE AGREEMENT

The North American Free Trade Agreement (NAFTA) is composed of three primary members; the United States of America, Mexico, and Canada. The outgrowth of this treaty has positive, far reaching effects on the economies of the three members economies. One of the primary differences between the NAFTA members and the Mercosur members is the often understated level of interdependence brought about by the high level of multi-national ownership enjoyed within the NAFTA membership (Bonelli, 2000). Once considered the weaker of the three NAFTA members, Mexico has made sharp economic gains and has reduced unemployment considerably since joining. The value of the Mexican Peso has continued to strengthen

and move to a level of relative stability over time compared to the past when substantial swings in valuation made direct foreign investment risky for those seeking new venture creation.

NAFTA is not free from critics. Again, most criticisms come from the short term ill effects of redeployment of labor during the transition stages or environmental disparities between trading partners (Hilpold, 2001). Many still perceive that big business benefits the most, although this is patently false. Most anecdotal reporting of how big business has benefitted is the reporting of the Maquiladora influence along the border between the United States and Mexico. Few realize that many smaller businesses have opened in both the United States and Mexico to serve these new markets. Currently both Canada and Mexico are running trade deficits with the United States. However, periods of deficits can be indicative of industry growth and productivity advantages enjoyed by these members. NAFTA has been expanding its reach globally by entering into favored trading partner agreements with non-western hemisphere countries.

EUROPEAN UNION AND COMPETITION

In response to NAFTA's more aggressive moves to enter into preferred trading partner agreements either collectively or in concert, the European-Union (EU) has also started targeting countries that show great potential in adding value to the European Union (Barnard, 2000). This is of particular relevance to the Mercosur trading partners since many in South America see themselves as having stronger ties to Europe than to the NAFTA partners (Ogier, 2001). Language, like the currency, has been a problem, but the EU's recent introduction of a common currency has met mostly with favorable response by its patronage.

The EU common currency is perhaps the most important driving factor in solidifying the EU. With a common currency, the limited ability to transact business because of language barriers AND currency barriers has been greatly diminished (Eichengreen, 1998). Common currency immediately allows producers immediate access to previously limited

knowledge about the efficiency of competitors in foreign countries and make appropriate competitive operational decisions. A common currency also allows consumers to readily compare products from both near and far. For national economists and direct foreign investors, a common currency provides a means of somewhat controlling the economies of all the member nations. This stability in the long term encourages investment by both internal and external companies (Cardenas & Tempesta, 2001).

FREE TRADE AGREEMENT OF THE AMERICAS

What has history shown us? Momentum is powerful, especially when the long term benefits outweigh the short term costs. The reason for Free Trade Agreement of the Americas (FTAA) is as clear as the original thinking was for Mercosur and NAFTA trade agreements: that well balanced economies provide for more stable governments which result in higher standards of living and fewer burdens on society in general. It is an inevitable fact that FTAA will come to pass in 2005 for this very reason (Anderson, 1996). However, it will not happen easily. Each member country must be willing to accept responsibility for a stable currency and minimal trade restrictions and tariffs. Free trade is working well for both the EU and NAFTA and for the benefit of all associate members.

As the economic engine of the western hemisphere continues to build, there will be continuing pressures to bring in the remaining nations into a tariff-less hemisphere. There will be problems as each country follows the applied rules of economic advantage and develop those resources of which it is best suited and has the natural advantage (Becker, 2001). American agriculture will suffer in some areas, especially in the fruit and vegetable sectors, but there should be some balancing effect attributable to the cyclic seasonal variations between the northern and southern hemispheres.

Governmental policies of member nations will have to be addressed as well as the social expectations of society (Jelin, 2001). The level of social reform and tax rates in given regions will have to change, which means many potential member nations of the FTAA will need to look at different sources

of revenue for governmental operations to continue supporting social programs at their current levels. A review of rights-versus-responsibilities and the degree of society expectations will need to be reexamined by each member society as changes occurs. Many Americans are ignorant of how "welfare" and "homeless" have much different meanings in each country outside the United States.

Secondarily, special interest groups such as labor unions, student unions, and cooperatives will resist changes in economic policies in order to maintain power and control over what are sometimes artificially created economies for their products or services (Millman & Pinkston, 2001). Mexican farmers complaints about U.S. sugar and avocado quotas are but one example of how "special interest" old line companies and groups want federal protection (Thompson, 2001). However, this is not limited to agriculture (Rowley, Thorbecke & Wagner, 1995). Labor unions perceived protection of American trucking in the United States will be a major hurdle for NAFTA in the near term (Stokes, 2001; Weiner, 2001). In Uruguay, a college education is free providing you can show evidence of completion of high school. How much is that education worth if it does not have a free market in which to operate? How well will a college education, free of competition, fair in an open economy where the market dictates what is desired rather than what a protectionist ruling committee dictates? The EU, as recently as last year, refused to allow the merger of Honeywell and General Electric to occur citing that it would create an unfair advantage in the aircraft industry while at the same time the EU members subsidize Airbus(Messerlin, 2001). No one country is innocent of trying to protect one market segment or industry within their economy. All areas of each members economy will have to be reviewed with an open eye toward protectionism based on special interests rather than on what protectionism should be used for; protecting national competitors from dumping and other economic atrocities.

CONCLUSION

Global economic illiteracy is perhaps the greatest problem facing the world during this present age. Poor economies breed unstable governments which result in both the misappropriation of human capital and in protectionist policies. This misappropriation of human capital is tragic in that many highly skilled, educated workers are left with jobs that do not allow the individual to reach their full potential. Protectionist policies in the long term erode the basic tenet of business; that free markets can and do provide consumers with selection, high quality, and lower costs.

For progress to be made, both national and local governments, public and private schools and all institutions of higher learning must begin to use all resources to educate the public about the benefits of open markets and close relations with their trading neighbors. Higher standards of living including those of improved health standards, stability in governments, and lower crime because of fuller employment are but a few benefits of a global trading society.

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ECONOMICS ARTICLES

THE EFFECT OF COLLECTIVE BARGAINING ON PRODUCTIVITY: 1947-1979

Sarah T. Pitts, Christian Brothers University
Rob H. Kamery, Christian Brothers University

ABSTRACT

Productivity measures the ratio between inputs and outputs. As productivity rises, there is more to share among all the income claimants. Thus, the worker, the employer, and the union have a huge stake in the efficiency of the economic system. It is questionable, however, whether the labor force acknowledges the relationship between productivity and income, since in the three most prosperous periods of the 20th century, average output per man hour grew less and less. During the years 1947 53, average output per man hour grew 4.1%; between 1953 66, the growth rate was 3%; and from 1966 73, it was only 2.1% (Thackray, 1978, June). There are a variety of explanations presented for this declining growth rate, which include the changes in the gender and age make up of the labor force, the lack of adequate capital spending, cutbacks in research and development outlays, and over regulation by the government. While there is no single cause for the decrease in the rate of growth, a contributing factor is the reduction in productivity resulting from the collective bargaining of union contracts.

INTRODUCTION

So called "free" collective bargaining became compulsory collective bargaining during various periods in the 20th century. The union official evaluated his or her worth to the union members by gains not in production

and output, but in what he or she could secure for members' use off the job, such as more money, higher pensions, earlier retirement, broader insurance coverage, more paid holidays, and vacations. Thus, when unions and management negotiated contracts, there was a difference in objectives that could be categorized into three areas of potential conflict. Bargaining disputes began over what could be labeled as security versus efficiency (Dubin, 1958). The individual tended to view his or her position as an employee as a source of income to provide for physical and social needs. Management viewed the individual as part of the production process and evaluated the employee for the work he or she contributed to the business organization. The contrast resulted in a conflict between the two sides when technology changed or when new equipment was introduced displacing workers from their jobs. Disputes also arose about job tenure, continuity of work, and work speed. It is interesting to note that the question of speed of work is now argued less and less as an issue of work fatigue and physical strain, instead becoming an issue that tends to be related to subjective standards. As an example of the dispute between labor and management concerning work speed, consider the miners. The claim of the miners for a six hour day was in response to the oversupply of miners rather than the physical labor involved (Durbin, 1958).

ADDITIONAL BARGAINING ISSUES

The second bargaining issue was a result of the diminishing significance of workmanship, meaning the skilled and capable performance of a trade (Durbin, 1958). As work was specialized through the breakdown of jobs into smaller and smaller units, greater efficiency in production resulted but brought along with it a separation of workers from the final products they produced. Job breakdown was also achieved by job dilution, which was the reduction in the amount of skill necessary to perform a job by breaking it down into its component parts. As a consequence of work specialization and job breakdown, the individual worker had no incentive to improve beyond the minimum standards set for quality and quantity of

output. The job was reduced to merely a way to earn a living. Thus, unions placed an emphasis on the significance of income. When labor costs, which directly or indirectly accounted for 75% of the cost of all products, increased with no corresponding rise in productivity, the union member disregarded the importance of efficiency in the economic system (Schmidt, 1973). The union's income objective was closely related to security, but during a recession the two were not always compatible. Evidence indicated that in a choice between the two, income came out on top, with continuing increases in wages and benefits demanded. When more than 80,000 UAW members were laid off in 1979 because of declining car sales, the UAW pushed for and won a contract with General Motors giving active workers a 34% wage increase over three years and improving pension benefits (Dodosh, 1979, September). The GM settlement was not an isolated case; other union gains in wages during this period included the garment industry (29%),and the trucking industry (31%) (Dodosh, 1979, September). Even with the decrease in production and the laying off of workers, the overriding consideration in employees' minds during contract talks was maintaining their standard of living during rising inflation, not worrying about losing their jobs.

Different objectives regarding stability and change resulted in the third possible area of conflict between unions and management (Durbin, 1958). Labor union policy supported changes that increased wages, reduced hours, and provided for shared costs in health and welfare plans. Management, on the other hand, often introduced significant changes affecting work and employees, the most obvious being technological changes. Another bargaining issue concerned the present ways of performing work and possible changes. This issue involved the application of local conditions against conditions of general developments in the larger society. For example, a union could argue for higher wage rates on the claim that other companies in the industry are paying more money. The company was likely to counter by insisting that the wage rates presently paid were in line with local community scales for similar or identical jobs.

THE IMPACT OF COLLECTIVE BARGAINING

With the three general areas of actual or potential conflict as a parameter, the impact of collective bargaining can best be illustrated through actual contract provisions limiting productivity. Unproductive practices include work that contributes little to the achievement of enterprise objectives, any unnecessary activity, or labor that has a value less than its cost. Through collective bargaining, most contracts required more employees than were necessary to do the work. Thus, contracts regulated the number of workers in a crew or how many workers could operate machinery. A study of railroads in the 1970s estimated an excess of 40,000 union employees, particularly firemen (Sibson, 1976). Technology had changed and firemen had little to do with the equipment being used. The employment of unnecessary men and women was evident in some electrician's locals that required an electrician to be constantly on the job when temporary lighting was used, even though he or she had nothing more to do than turn off the lights when the other men or women were through working.

Rules stated in union contracts made it difficult to lay off workers when they were no longer needed. Typical contract provisions made dismissal of employees for marginal or substandard output a cause for contention. In a few cases, where the union had failed to obtain a closed shop, unions required that non members be dropped before any union member was dismissed. Employers naturally wanted a free hand in picking the employees to be dropped. Not only did such freedom permit management to dismiss the least competent and least industrious workers, but the knowledge that such workers could be the first to go was a continuing stimulus to maintain efficiency throughout the labor force. A principal method that unions employed in attempting to control layoffs required that workers be dropped in order of their seniority. Several aspects of seniority could diminish the productivity of labor. Seniority was likely to bind the whole organization together in such a way as to increase the number of workers affected by technological changes, thus strengthening the opposition to change. For example, a change in process which displaced a few workers near the top of the seniority list could cause them to displace other men with

less seniority, and those in turn to displace others until a large part of the department has been affected. As a result of the seniority rule, the union required that the employer rehire laid off employees in their order of seniority before engaging other workers. The principal arguments raised against seniority as a basis for layoffs and recalls was that it placed a premium on mediocrity and could limit the employer in finding the workers who are best qualified for the work. It discouraged individual initiative by ignoring differences in ability and enthusiasm, and it interfered with management's ability to discipline and reward in terms of performance. Both of the practices have an adverse effect on productivity.

Another union approach to controlling job opportunities and insuring uniform standards was in the direction of contract rule making on the setting of production standards and make work rules and policies. A recurring source of conflict between unions and management arose from differing views as to what should properly constitute the average worker's daily job. The setting of daily or weekly work standards had the effect of restricting output. Closely related to work standards was the wage structure itself. The two basic methods of paying labor were day work (by the time worked) or piece work (by the piece produced). Traditionally, the union had opposed incentive methods of payment. Unions hypothesized that directly relating earnings to effort worked against the major union principle of wage uniformity. The typical worker is compensated for time, not productivity. Even with the concession of employers to day work, there was still the disagreement over single rates or rate ranges. As a general rule, employers preferred rate ranges, whereas unions preferred single rates. Employers favor rate ranges because they afford a greater flexibility in wage administration and allow management to reward superior effort and performance on the job. Thus, management argued for progress on merit, whereas the union argued for automatic increases at regular intervals.

There were also indirect limits imposed on the speed of work. At one time, the longshoremen's union on the Pacific coast regulated the size of the sling load, which served to reduce productivity. Unions could also make-work for their members by controlling the quality of work and insisting on better quality work than the employer required. Still other techniques

used by unions to incorporate make work rules into contracts included requiring time consuming methods of work, encouraging unnecessary work to be done, and providing for work to be done more than once. The agreement in effect in 1939 between Painter's District Council No. 14 and the Chicago contractors prohibited the use of brushes more than 4 1/2 inches wide in oil painting jobs (Slichter, 1941). This increased the time required for each job. Common rules among building trade unions prohibited or discouraged the performance of certain operations in the shop rather than on the job, even though it was much easier and quicker to perform many operations in shops where special machines and equipment were available instead of on the job. The New York Plasterers' Local had a contract provision requiring that stock models be destroyed in order to provide work for the molders, an example of the existence of unnecessary work. In some cases, the rules permitted rework, which required that factory-produced products or components must be disassembled when they arrived on-site and then be reassembled before they could be installed. The New York Local and others refused to install switchboards and other electrical components unless the wiring done in the manufacturing plant was torn out and union members were permitted to rewire the apparatus (Slichter, 1941).

Make work rules also included the requirement that work must be performed by members of a given skill level. As a consequence of this provision, skilled workers were often used to do work which semi skilled or unskilled workers were capable of doing. While these rules did not necessarily limit output, they did raise costs. The railroad unions attempted to establish the principle that each and every piece of work in the operation of the railroad belonged to some particular class of employee. Thus, it was in effect owned by that class. Given this structure, management no longer had the right to decide what class of labor could perform the particular job most efficiently and economically under the circumstances, but had to call a member of the union who "owned" the work. If management failed to call a worker of the proper class, a furloughed worker of the class could claim a day's pay for not being called upon to do the work. The restriction of work to a given trade was acceptable at higher levels, but at lower or intermediate skill levels it reduced productivity. The amount of down time in waiting for

the next tradesmen with the proper skill level both reduced ultimate output and increased cost.

ADDITIONAL PROVISIONS

Other provisions established through collective bargaining inhibited management's right to manage the business effectively. The limitations imposed on management in assigning people to the work they were best qualified to do, as well as the restrictions placed on management in the areas of transfer and work assignments, were included in the discussion on seniority. Seniority was also be a factor in promotions, with employers resisting any effort to introduce length of service as a determining factor in promotions. Management insisted that ability should be the governing factor, and the right to promote should be an exclusive management prerogative. An additional restriction could be placed on the employer in terms of who the employer could hire. A primary objective of most unions was to secure a closed shop arrangement that would solidify the union's position in the particular enterprise, contributing to the objective of job security. Even if the employer was free to hire unrestricted workers, the union attempted to negotiate a union shop clause requiring the new employee to join the union at the end of his or her probationary period. If a particular trade union was successful in controlling the supply of labor in its labor market area, it was in a position to conserve and allocate the existing job opportunities as it saw fit and to raise the price of that labor by restricting the supply.

Union bargainers used the threat of a strike in order to persuade employer bargainers to accept the union's demands. The primary intent of such a tactic was to prevent production. The strike, as the lever of the union power, generally involved two steps. In the first step, employees stopped work in unison, and in the second, other workers were prevented from competing for the jobs. Otherwise, the strike would be no more than a mass resignation. Membership solidarity was important if the strike was to be the means of acceptance of union demands. Picket lines were a display of solidarity, established to prevent other workers from taking the striker's jobs and to keep strikers from returning prematurely to work. Today, when a

plant is struck, the employer generally makes no attempt to keep it running, a fact attesting to the effectiveness of a strike.

In addition to the negative effect collective bargaining had on labor productivity, the process itself was considered a detraction from productivity. The time spent in negotiation on a contract, in day to day operations, in discussions with union stewards, and in the handling of grievances was time spent unproductively.

Initially, labor unions performed the much-needed function of improving working conditions. Once this objective was satisfied, however, the unions continued to gain power and exert their strength in other areas. As management introduced new machines and technologies that increased productivity, unions used their influence to counter such actions. New machines and technologies required fewer workers, thus threatening jobs. Unions, through collective bargaining, were successful in achieving their goals of security, income, and stability. However, achieving these goals came at the expense of productivity. All of the contract provisions mentioned above adversely affected productivity and increased the cost of labor. The combined effect of the two was documented by using figures from the second quarter of 1979. Productivity dropped in the private business sector at a seasonally adjusted annual rate of 2.4%, while at the same time there was a 9.3% annual rate of increase in hourly compensation. This brought the cost of producing a unit of output to a 12% annual rate of increase (Dodosh, 1979, September). Rising labor costs, combined with little or no gains in productivity to offset the rise in labor costs, placed pressure on businesses to raise prices. Businesses raised their prices in order to maintain their profit margin. This circled back to the consumer when labor's wages were increased. Union member's demanded higher wages in order to maintain their standard of living.

ALTERNATIVE APPROACHES

There was an alternative approach to collective bargaining known as productivity bargaining. Management first identified all the elements of the union contract that inhibited or reduced productivity. Each of the

unproductive practices were costed and developed into an analytic framework for estimating the potential improved productivity if these practices were eliminated. Management and the union then had to combine to achieve common objectives. Unfortunately, given the existing diversity in objectives between the two bargainers, productivity bargaining did not appear to be obtainable without drastic changes on both sides.

A 1970s development, known as a self financing productivity deal, was more realistic because it did not require a change in established objectives. Union negotiators were not satisfied with the 10% limit on wage increases and pressured management to exceed the limit, which resulted in the introduction of performance linked wage payments. The government had accepted the plan, provided that the arrangement paid for itself and that the total cost of producing the goods did not increase as a result. Management had decide whether to group employees together and measure output in average units produced per day, which would lower individual incentive, or measure the performance of individual or small related groups, which would be more costly in management time and effort and would take longer to negotiate. Possible conflicts with the union could arise over machine breakdowns, quality control, and a guaranteed level of earnings.

CONCLUSION

Given the disagreements that lacked closure concerning alternatives to collective bargaining, it was unlikely that any major changes in the process would occur in the 1970s or 1980s. Management still had to contend with the many provisions resulting from collective bargaining that limited productivity, including unnecessary employees, seniority, restricted control over hiring, layoffs, work assignments, rework, output standards, wage structures, and strikes. Working within this environment, the trend toward a decrease in the growth rate of productivity and an increase in hourly compensation was certain to continue.

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INTERNATIONAL LABOR MIGRATION FOR THE BALTIC STATES IN THE CONTEXT OF EU EASTWARD ENLARGEMENT

Tiiu Paas, University of Tartu, Estonia
Nancy J. Scannell, University of Illinois at Springfield

ABSTRACT

Increased labor migration, which is explicated by various socio-economic and political factors, is one of the expected consequences of the European Union's (EU) eastward enlargement scheme. Causal labor flows will inevitably impact the composition and other characteristics of human capital markets for both current EU members as well as anticipated accession nations. Valuable lessons in international labor migration, found in Europe in the 1960s and 1970s and particularly during the EU's previous round of enlargement, can be guardedly relied upon to formulate some projections for international labor migration outcomes germane to impending EU as well as Eurozone enlargement processes.

INTRODUCTION - EU EASTWARD ACCESSION

Today the EU is comprised of 15 countries (EU15): Austria, Belgium, Britain (UK), Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden. The European Commission's (EC) latest annual reports on the progress of the mostly Central and Eastern European countries (CEEC) toward EU accession indicated that the 10 leading countries (CC10) - the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia

- could join the European Union in 2004. The two Balkan candidates not included in that schedule, Bulgaria and Romania, were offered encouragement to make further progress (O'Rourke, 2002). Among the 10 countries named to accede in 2004, 2 are non-CEEC, Cyprus and Malta. This paper also considers a subset of candidate countries, namely CC8, which refers to the 8 CEEC approved for accession in 2004: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia. Despite accession's promise of a unified Europe, the work of transforming the societies and economies of the region will go on, and will bring with it scores of new challenges for the augmented EU. Labor migration is a palpable one.

LABOR MARKET FLEXIBILITY

Flexibility of labor markets is a salient feature of well-functioning market-based economy. Davis and Haltiwanger (1999) report that in most western economies roughly one in ten jobs is created and one in ten jobs is destroyed every year. Strong labor mobility permits the rapid reallocation of resources to where they can attract their highest worth in a world of rapid changes in technology, and thus is vital for economic growth. At the same time, high-pace job reallocation involves substantial worker displacement with associated significant earnings losses for the impacted workers (Jacobsen, et al, 1993). The flexibility of labor markets is a key channel that will yield nominal and real convergences of less and more advanced economies.

Free movement of labor will have rather conspicuous pressure on the labor markets of the Baltic States due to the potential exodus of the better-qualified and more flexible labor force participants. Movers will also include young people possessing a secondary school (gymnasium) education, who are unable to find jobs at home commensurate with their educational attainment. They are prepared to work abroad as blue color workers, securing salaries that are relatively higher than those obtainable in their home countries. By and large, reallocation of resources, job creation and losses, as well as flows between labor market states are extremely important for

transition economies. It shows the flexibility of these labor markets. A high labor market flexibility leads to higher economic growth, it will also lead to a more rapid transition.

EMU AND EU15 LABOR MARKETS

Labor markets of the CC10 differ notably from the labor markets of the EU15. With regard to the EMU member states (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, and Spain, or the EU15 minus Denmark, UK and Sweden), a leading hypothesis of high structural unemployment rates in the EU15 can be explained to a large extent by the type of labour market institutions prevailing in the member countries, such as hiring and firing costs, unemployment benefits, collective bargaining regulations etc. The leading explanation for the lack of reform is that existing institutions represent a social equilibrium. Any deviation from that equilibrium will bring about significant political costs to governments, unions and employers, which they consider to be unbearable.

The Economic and Monetary Union (EMU) is a complement to the European single market, the objective of which is the free movement of people, goods, services and capital within the European Union. With a single currency, the single market is intended to operate better due to the removal of the transaction costs brought about by currency conversions, the elimination of exchange rate variations which disrupt trade and investments, and the transparency of prices in euro (Quest, 1998).

Further developments of the EMU might lead governments to modify labor market regulations in the EU15. Conventional wisdom is that the EMU eventually removes some barriers to labor market reform, a process backed by stronger labor market competition due to eastward enlargement. Research should concentrate on wage flexibility , taking into account the wage bargaining system, relative wage flexibility (dispersion of wages) and working-time flexibility; geographical/job-mobility (focusing on increased transparency and large transaction costs); as well as reforms of labor market

institutional frameworks (regulation of hiring and firing with regard to costs and unemployment benefits).

FDI IMPACTS ON CC8 AND CC10 LABOR MARKETS

The challenges facing labor markets of accession countries are even more severe than those which EU members have to endure. Increasing FDI flows from the euro-zone to transitional countries, which distorted mutual trade relations and pushed the economies in transition to rapid restructuring, has considerably influenced labor market developments of these countries. The effects of capital movements from the EU member states to applicant countries also include the relocation of labor-intensive production from the EU to the CEEC, hurting wages and employment of unskilled workers in specific enterprises and branches. FDI have significant spillover effects in countries in transition. FDI not only generate an inflow of capital, but also provide local firms with managerial skills and often involve a transfer of technology. These processes certainly support the adjustment of transitional labor markets with the EU requirements.

MIGRATION THEORY

Theoretically, labor migration is a consequence of rational choice, oriented within a certain system of values. To wit, if a person's minimal needs within one social context are not satisfied, she or he tends to emigrate to a new locale within a more attractive social context. She or he aspires to experience improved conditions that either fulfill needs, reduce depravity and/or enhance the potential for development (see also Mangalam & Morgan, 1968). This is but one of the many possible explanations for labor migration, which, even if plausible, cannot on its own accord afford a comprehensive explanation for labor movement.

Indeed, there exists no single, coherent theory of migration, but rather a fragmented set of disparate theories. Many of the theories have developed

in isolation from the rest. Theories that attempts to explain migration processes include the neoclassical theory of migration, segmented labor market theory, world system theory, human capital theory, new economics of labor migration theory, dual labor market theory, and gravity model approaches.

According to neoclassical economic theory, international labor flows are prompted by real wage disparities among nations. International labor mobility is thought to be the key to the maintenance of a single, international equilibrium real wage for all countries (Borjas, 1989; Öberg, 1997). Per Keynesian theory, labor supply depends on the nominal wage, as well as the real wage. This distinction is made in light of the distinctive views toward the role of money. Money is not only a medium of exchange but also a medium of saving and, therefore, potential migrants consider relatively high nominal wage regions attractive. The intent to re-emigrate or to remit funds bolsters the relative significance of the nominal wage-level vis-à-vis the real wage level. From this aspect of Keynesian theory, it follows that unemployment differences between a sending country and a receiving country has a positive effect on the volume of labor migration between said countries (see also Jennissen, 2002).

Piore (1979) posits three possible explanations for the demand of foreign workers in modern industrial societies: a) general labor shortages, b) the need to fill the bottom positions in the job hierarchy, and c) labor shortages in the secondary sector, which is characterized by a labor-intensive method of production and predominantly low-skilled labor market.

The dual labor market theory explores reasons for and consequences of international labor migration and stipulates that low- and high-skilled labor flows need be analyzed independently. (See case studies "Migration from Portugal to Switzerland: Low skilled, classical labor migration" and "Migration from Sweden to Norway: High skilled post-industrial labor migration"; Jennissen, 2002.) The dual labor market theory affords a semblance of suitability for exploring and predicting changes for the EU labor markets during and in the aftermath of eastward enlargement.

MIGRATION PATTERNS IN THE 60S, 70S, AND 80S

International labor migration in Europe in the 1960s and early 1970s was largely characterized by low-skilled labor migration. The domestic labor force in many Western European countries had been unable to accommodate the inordinate demand for manual labor. Consequently, many labor migrants moved from Southern Europe (Greece, Italy, Portugal, Spain) and Turkey to Western Europe, as well as from Ireland and Finland to UK and Sweden. The end of the mid-1970 economic recession essentially halted these labor flows, and many labor migrants returned to their respective countries of origin. Labor migrants who chose to not return, were often joined by their families from abroad, a flow which was characteristics of international labor migration in the second half of the 1970s and early 1980s. The second half of 1970s also saw some post-colonial migration, particularly in the cases of Portugal and the Netherlands. Post-industrial international labor migration, consisting of a combination of high- and low-skilled labor (including clandestine and asylum migration), emerged in the 1980s.

ECONOMIC DETERMINANTS OF MIGRATION

A paper by Jennissen (2001) focuses on 4 economic determinants of international migration in Europe: GDP per capita, unemployment, educational level and migrant stock. The study concludes that each variable except unemployment has a positive effect on international net migration. Generally, the rationale for international migration can be divided into push and pull factors (revisited later in Table 2), depending on whether these factors characterize the source (home) or destination (host) country, respectively. Either factor can contribute to the promotion or restraint of migration. The main pull factors include relatively favorable employment opportunities and high income potential in the host destination country. Conversely, the main push factors are relatively high unemployment and low earnings in the home country.

OTHER DETERMINANTS OF LABOR MIGRATION

In addition to economic determinants of international labor migration, there are also legislative (legislation that regulates labor movement between countries, i.e., labor legislation), demographic (number and structure of country population), political, social, psychological, cultural, and historical determinants. Of singular import is the influence of migrant networks, which help potential migrants of the same ethnic origin to locate jobs and to dispense information about accommodation, proper labor and social policy measures, etc. Differences in educational levels between sending and receiving countries also influence labor migration. For instance, the high educational level of a sending country may have a negative effect on low-skilled labor flows from the same country.

POST EU ENLARGEMENT MIGRATION FORECAST STUDIES

In the second half of the 1990s, numerous studies were conducted on the prospects of international labor migration behavior after EU eastward enlargement (expected in 2004), when the current regime will be replaced with the right of free labor movement. The forecasts, in absence of administrative restriction, vary considerably depending on methodology and assumptions used within the studies (Brücker & Boeri, 2000; Sinn, et al, 2001; Walterkirchen & Dietz, 1998; Bauer & Zimmermann, 1999; Hille & Straubhaar, 2000).

The main methodological distinction is between implementations of surveys versus quantitative models. Surveys that record intentions and desires do not pretend to predict actual labor movement. Model-based studies' outcomes remain relatively ambiguous due to the complexity of imbedded factors influencing migration and the reliance on strong assumptions. These studies, for example, attempt to adopt historic patterns observed in major recent migrations and embrace them as assumptions in projection studies of forthcoming Eastward enlargement labor migration. Uncertainty in explaining outcomes is exacerbated by necessarily relying on

very long-term forecasts of economic developments in the EU and candidate countries (EC, 2001).

Eurostat studies (2000a and 2000b) afford further evidence of the uncertainty that surrounds migration predictions. Two critical assumptions are made in these studies: that the present distribution of candidate country nationals among member states will not change; and that the share of employees is based on the present (rather low) share of employees among residents. These assumptions could distort the predictions insofar as the present distribution of employment and employment rate may have resulted from historical circumstances and migration patterns different than those that will prevail after accession and in a context of free movement.

MIGRATION STUDY ESTIMATES

Estimates based on various research studies place the long-run migration potential from CC10 at roughly 1% of the EU15 population, hence, a flow of 3.8 million persons. (The populated of EU15 is estimated at 380,000,000.) Surveys intimate a strong preference among candidate country nationals for temporary work, which foretells of important subsequent flows of return migration to the CC10 candidate countries. Based on some predictions in absence of administrative restriction for labor movement, the initial emigration from the CC8 into EU15 is approximately 70,000 workers annually or 0.05% of the CC8 population. (The CC8 population is approximately 14,000,000.) If family members are included, the total swells to approximately 200,000 persons (EC, 2001, pp.7-8).

According to the study by Brücker and Boeri (2000), labor migration will be concentrated to only a few current EU member states, and enlargement will not significantly affect wages and employment in the EU. Two-thirds of the estimated 70,000 labor migrant flows from the CC8 is expected to be absorbed by Germany in the first few years. Austria will absorb about 20% of the labor flows coming from the CC8. The forecasts show that the share of the CC10 people in the population of the present EU member states would rise from 0.2% in 1998 to 1.1% in 2030 (Ibid., p.9). In sum, according to

predictions, the movement of labor between the EU countries after eastward enlargement will not be significant.

The stock of labor force in EU15, which emigrated from non-EU countries is not significant. In 1999 the figure was about 5.3 million or only 3.1% of the EU15's total labor force. The number of non-EU residents was about 12 million or 3.2% of total EU residents. Beyond those persons officially working in the EU member states, some estimates show that there is also about 600,000 working tourists from the candidate countries (Eurostat, 2000a and 2000b). Apparently, the stock of emigrants from the candidate countries is not large and, furthermore, there are no well-developed and institutionalized migrant networks that could support East-West labor migration.

Table 1 shows that the number of residents in the selected EU member countries from the Baltic States alone is also insignificant. The 1998 data show (summing across columns for each of the 9 EU member countries listed) approximately 15,000 from Estonia, 7500 from Latvia and 8500 from Lithuania.. Table 1 also shows the miniscule share of Baltic State nationals in 3 selected EU countries: about 1% of Baltic State nationals live in Germany, 0.3% in Finland, and 0.2% in Sweden. Also shown for selected EU member countries are the shares of EU member population comprised of Baltic State nationals. For Germany, 0.02% of its population is attributed to Baltic State nationals. Very small numbers are also associated with Finland (19%), Sweden (.02%), Denmark (.03%), Holland (.002%), Italy (.001%), and Greece (.002%). It can be surmised that changes in the Baltic States' labor markets and labor flows from these countries will not have a significant impact on the EU labor market as a whole. (Total Baltic States' population is about 7.6 million: 1.45 million in Estonia, 2.44 million in Latvia and 3.70 million in Lithuania.)

Table 1. Stock of Baltic Citizens in Selected EU Member States in 1998

	Ger.	Fin.	Swe.	Den.	Hol.*	Italy	Gre	Spain	Por.
Estonia	3173	9689	1124	384	100	98	36	31	2
Latvia	6147	134	387	449	110	168	73	36	1
Lithuania	6631	163	358	555	260	174	109	65	10
Total	15951	9986	1869	1388	470	440	218	86	13
Baltic Nationals in the EU in % of Total Baltic States' Population									
	1.01	0.31	0.22						
Baltic Nationals in the EU in % of Selected EU Member's Population									
	0.02	0.19	0.02	0.03	0.002	0.001	0.002		

Source: Eurostat, (2000a & 2000b); Authors' calculations.

* The study assumes accession in 2002 of all candidate countries. Its often-quoted estimate of 335,000 refers to the total number of people migrating from all candidate countries in 2002, of which 35% would be employees. The year 2004 is the new projection date for CC10 accession.

BSR MIGRATION FLOWS BETWEEN EU MEMBER COUNTRIES AND THE BALTIC STATES

The integration of the Baltic Sea Region (BSR) countries (Denmark, Finland, Germany, Estonia, Latvia, Lithuania, Poland, Russia, and Sweden) into the EU has more than twenty-five years of history starting from January 1, 1973 when Denmark became a member of the EU. The collapse of the Berlin Wall and German unification shifted the EU border to the East, and Germany became the largest BSR country. Sweden and Finland joined the EU in January 1, 1995 (the northern enlargement). As the BSR countries with developed market economies strove for the EU membership, transitional countries of the region (Poland, Estonia, Latvia, and Lithuania) embarked on the creation of networks to promote integration. The first initiative advanced international trade networks: free trade areas with EFTA countries, the Baltic

Free Trade Area (covering Estonia, Latvia and Lithuania), CEFTA, and others.

The chief hosts for the Baltic States' migrant labor force are their fellow BSR countries, Denmark, Finland, Germany, Poland, Russia, and Sweden. Of these 6 countries, 4 are members of the current EU15, Denmark, Finland, Sweden and Germany. And in the context of Eastward enlargement, whereby the integration of border regions appears to be a relevant consideration, an analysis of labor migration problems of the Baltic States calls for an emphasis to be placed on the potential for labor movement within the four BSR countries of the EU15.

According to the Eurostat data (2000), more than 90% of Baltic States' nationals in the EU15 are living in the BSR countries (98.2% of Estonians, 91.8% of Latvians and 92.6 of Lithuanians). According to the survey information of the Ministry for Social Affairs and Labor of Lithuania (2001), Lithuanians have mainly worked in the following countries in the recent years: Russia - 20.3%, Germany - 18.6%, Great Britain - 9.9%, US - 8.1%, Denmark - 7.6%, Italy - 6.4%, Sweden - 4.1%. Hence, more than 50% of Lithuanians that temporarily worked outside of the home country worked in the BSR countries.

At the same time, due to the very small population size of the Baltic States, the share of the Baltic nationals in the population of these countries is insignificant; it in no case exceeds 0.2%. Of the total number of Estonian citizens living in the EU15, 66% live in Finland. Of the total number of Latvian and Lithuanian citizens living in the EU15, 82% and 80%, respectively, reside in Germany. Given the relative prominence of Baltic State nationals in Finland and Germany, it is tempting to think that migrant networks may support migration of the Baltic States' labor force to these two BSR countries. In reality, these networks are not sufficiently institutionalized to allow them to play a significant role in attracting migrant labor from the Baltic States.

PULL AND PUSH FACTORS REVISITED - APPLICATION TO THE BALTIC STATES AND BSR

Important economic pull and push factors that influence labor movement within the BSR countries are presented in Table 2. They are GDP per capita using purchasing power parity (PPP) conversion factors, GDP per capita using market exchange rates (MER), Population, Unemployment Rate, and Distance between the BSR country capitals. Distance is not only a determinant of the economic costs of migration but also denotes cultural proximity and the extent of historical relationships between the countries. For example, due to their historical and cultural associations as well as geographic proximity, the migration of the Baltic States labor force will be mainly to fellow BSR countries.

Table 2 data indicate lower GDP per capita and higher unemployment rates for Baltic State relative to other BSR countries that are current members of the UE15. This, along with the proximity of Baltic States to fellow BSR members of the EU15, are driving forces in the positive growth of cross-border emigration from the Baltic States.

LEGAL ENVIRONMENT

The consequences of EU enlargement for international labor migration depend also on the prevailing legal environment. If citizens of the candidate countries are allowed to work in any EU country immediately upon joining the EU, then significant East-West labor flows may occur during the first years of EU eastward enlargement. Germany and Austria are especially prone to substantial (and unwanted) labor migration. Therefore, it is likely that, similar to the arrangement implemented during a prior EU enlargement phase involving Greece, Portugal and Spain, a transitional agreement with respect to free labor movement will be formulated to mitigate the expected flows between CC10 and present EU members, Germany and Austria.

Table 2. Factors Influencing the BSR Countries' Labor Migration, 2000.

Factor	The Baltic States	The BSR Countries that are Current EU Members
GDP (PPP) per capita, ($USD)	Estonia - 10068; Latvia - 6893; Lithuania - 7094	Denmark. - 27404; Finland - 25154; Germany - 25290; Sweden - 24288
GDP (MER) per capita, ($USD)	Estonia - 3577; Latvia - 2938; Lithuania - 3044	Denmark - 30400; Finland - 23418; Germany - 22829; Sweden - 25627
Number of Population (Mil.)	Estonia - 1.45; Latvia - 2.4; Lithuania - 3.7	Denmark - 5.3; Finland - 5.2; Germany - 82; Sweden - 8.9
Unemployment Rate (%)	Estonia - 13.9%; Latvia - 14.7%; Lithuania 15.9%	Denmark - 4,6 %; Finland - 9,7 %; Germany - 10% ; Sweden - 4,7
Distance (Kilometers between capital cities)	Est-Den.: 842; Est-Ger.: 1045; Est-Swe.: 383; Est.-Fin.: 84 Lat.-Den.:733; Lat.-Fin.:361; Lat.-Ger. 850; Lat.-Swe.: 450 Lit.-Den.:826; Lit.-Fin.:611; Lit.-Ger.:828; Lit.-Swe.: 686	Den.-Est.: 842; Den.-Lat.: 733; Den.-Lit.: 826; Fin.-Est.: 84; Fin.-Lat..361; Fin.-Lit: 611 Ger.-Est: 1045; Ger.-Lat.: 850; Ger.-Lit.:828; Swe.-Est.:383; Swe-Lat: 450; Swe-Lit: 686

Sources: IMF, Financial Statistic Yearbook, 2001; World Bank, 2001 (www.worldbank.org); Statistical Office of Estonia, 2001; The Baltic and the Nordic Countries. Central Statistical Bureau of Latvia, 2000. International Labor Organization 2002 (www.ilo.org), Estonia, Latvia, Lithuania in Figures 2000, Statistical Office of Estonia, Tallinn, 2000.

The conditions of labor market accessibility for the 4 BSR countries that are also members of the EU15 are presented in the Table 3. Accessibility varies somewhat among the countries, and in two cases (Denmark and Finland), candidate migrants are not assigned to any special Regime.

Long-term permits are allotted by each of the countries except Germany. Restrictions on accessibility are somewhat superfluous in the case of Baltic State migration. Due to very small size of the Baltic State labor markets, the Baltic influence on the EU labor market will not be significant even if people from the Baltic States were to immediately gain unfettered access to all EU15 labor markets after joining the EU. Finland might sustain some impact since it is a BSR industrialized country with relatively small open economy.

EDUCATION AND MIGRATION

The average level of educational attainment in the Baltic States is high. Because other CEECs are on par with Baltic State educational levels, education assumes a comparatively insignificant role as a determinant in labor migration in the region. If recognition and credence are given to diplomas of the accession countries' people, it is probable this will prompt some increase of high skilled labor force movement between East and West (both directions), and the wages of highly qualified persons will readily yield a new equilibrium wage level.

Educational levels in some accession counties including the Baltic States are even approaching the natural upper limit. Thus, with respect to educational levels, former low skilled labor migration from less developed regions in the EU cannot be viewed as fair parallels to future low skilled migration from accession countries. It is somewhat predictable that due to significant differences in real and nominal wages and structural unemployment among most accession countries including the Baltic States, comparatively well educated people will move to the industrialized EU countries in order to work there, albeit as blue color workers.

Table 3. The Conditions of The Labor Market Access In The BSR Countries, The Current Members Of EU in 2000.

Country	Access of Third Country Nationals To The Labor Market	Special Regime For Candidate Countries	Long-Term Residence Permits
Denmark	Very limited access. Work permit needs to be obtained prior to entering the country. Labor market need has to exist. Total number of permits in 1999: 73,092 .	No special regime.	In general, if a work permit is granted, a residence permit will also be granted.
Finland	Work permit needs to be obtained prior to entering Finland. Labor market has to exist. Privileged regimes for qualified workforce.	No special regime.	Usually for 1 year; after 2 years a permanent residence permit may be granted.
Germany	Residence permits (granted up to 5 years) and work authorization needed. Work permit normally requires existence of need in labor market. Total number of permits in 1999: 1,083,268.	Quota-based agreements on trainee workers with Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia.	- none -
Sweden	Different countries jointly decide with national authorities on the issuance of temporary work permits, which are only issued in the case of labor shortage. Total number of foreign workers in 1999 was about 220,000.	Bilateral agreements on trainees.	After 2 years of residence, a permanent residence permit may be applied for.

Source, EC, 2001.

CROSS-BORDER MIGRATION IN THE BSR: THE REAL WAGE GAP

It is highly probable that once free movement of labor is attained, cross-border movement in border regions of the Baltic States will significantly increase. Cross-border movement includes commutes by employed persons and workers contracted to perform occasional jobs, some lasting days, weeks, or months. Cross-border workers maintain their dwellings and family in their home countries and thus avoid the high transaction cost of moving and adaptation to foreign country. Cross-border workers ordinarily take their wages back to the home country, and hence, the wage gap should be assessed in real terms, accounting for the relatively higher home-country purchasing power of their earned wages.

HOME AND HOST COUNTRY COSTS AND BENEFITS OF MIGRATION

Prior experience and research studies show that labor migration processes have had little effect on host country unemployment and wages (Sinn, 2001). Migration of labor from a home country to a country of destination can even provide gain for the host country, since migrants generally receive a wage below the gain in value added to the host economy. From a long-term perspective, labor migration for the host country can be seen as a welcome measure to mitigate the problems of a declining and aging European population.

Cross-border workers can be costly to the country of residence (home country), which may not receive income tax revenue from cross-border workers, yet which is obligated to finance social expenditures and local infrastructures for the benefit of the workers' families. Nonetheless, studies (Sinn, 2001) indicate that income earned by immigrants produces additional investment income, rents and increased consumer spending, and, in general, does not tend to impose an inordinate burden on the domestic population. As for timing and the budgetary burden of the CEEC's accession, a paper by

Kandogan (2000) uses a game theory model to show that under current voting rules, costs of eastern enlargement will be quite significant no matter when the CC10 join.

CONCLUSION

The free movement of labor is expected to induce growth in cross-border migration between the EU15 and CC10. Economic factors, such as lower GDP per capita and higher unemployment rates for Baltic State relative to other BSR countries, as well as physical proximity of Baltic States to fellow BSR members of the EU15, will promote growth of cross-border emigration from the Baltic States.

Given the very small size of the Baltic States' labor markets relative to the EU15, labor migration flows from the Baltic States into the EU15 are not expected to be significant in the nascent stages of CC10 accession. Cross-border migration costs to the home country are countered by home country benefits, including additional investment income, rents and increased consumer spending.

Borrowing on experiences of prior rounds of EU enlargement and the predictions that labor migration will not exceed 0.2% of the population, estimates of migration flows in the initial years of free labor movement from each of the Baltic States into the EU15 can be conceived. Estonian emigration could be estimated at 2500 to 2800 migrants per year or about 10,000 to 14,000 persons during the first half decade. Latvia can be expected to emigrate roughly 5000 to 6000 nationals per year or 15,000 to 23,000 persons during the first half decade. The numbers that can be projected for Lithuania are, respectively, 7000 to 8000 persons per year or 27,000 to 37,000 emigrants during the first half of the decade. Over a longer term (10 years period), labor migration is expected to decline.

Further cogitation on historic labor migration experiences germane to previous rounds of EU enlargement lends itself to the following suppositions. Firstly, it is predictable that migrating laborers will belong mainly to a relatively qualified and flexible labor force. Secondly, due to the

very small size of the Baltic labor markets compared to the EU as a whole, labor migration from the Baltic States into the EU15 countries will be insignificant and will not impose noticeable pressure on the EU15 labor markets. Thirdly, free movement of labor will not produce sufficient pressure on EU15 labor markets to disturb their levels of unemployment and wages. Fourthly, the main absorbers of the labor flows from CC8 will be Germany and Austria. Fifthly, due to somewhat shared historical and cultural conditioning and neighborhood effects, Baltic States' labor force emigrants will primarily converge on their fellow BSR countries.

The import of labor from the Baltic States might alleviate the dilemma of a declining and aging European population, but it cannot be solely relied on to solve demographic problems in the long run. Growth of labor flexibility is critical in order to achieve sustainable development in all European countries in the context of EMU and EU eastward enlargement.

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OLIGOPOLISTS THEN AND NOW: A STUDY OF THE MEATPACKING INDUSTRY

Lori A. Dickes, Lander University
Allen L. Dickes, Washburn University

ABSTRACT

This paper explores the hypothesis that the meat packing industry has had an evolution that, even with public policy changes, continues to push the industry towards an oligopolistic structure (at times monopoly). The firms today, as in years past, continue to be highly motivated by consolidation and integration. The paper will begin by tracing the historical development of the meatpacking industry, the regulatory response to the industry, and finally discuss the literature and current consolidation within the industry. After doing this, the paper hopes to reveal that there is a common thread that runs through the meatpacking industry and that is that economies of scale and cost advantages of integration are the driving force in 2002 just as they were in 1900. It appears that in the case of the meatpacking industry history sometimes repeats itself.

INTRODUCTION

The structure of modern American industry and enterprise has been a topic of popular and academic discussion and an issue of debate among economists and policymakers for nearly 125 years. A.D. Chandler in his classic 1962 study, Strategy and Structure, argues that the unprecedented industrialization of the late 19th century led to industrial enterprises like the U.S. had never before seen. Chandler specifically focuses on firms like

DuPont, General Motors, Standard Oil, and Sears Roebuck and Company. However, Chandler also points to meatpacking as an industry where structure followed strategy. Chandler defines business structure as the organization devised to administer enlarged activities. He concludes that the organizational structure resulted from entrepreneurs planning and administering enterprise growth (Chandler, 1962).

As the nineteenth century closed, firms in railroads, steel, tobacco, sugar refining, oil, explosives, brewing and distilling, agricultural equipment and meatpacking consolidated market power. The structure of major U.S. industries departed rapidly from the classical definition of competition. Beginning in the 1870s, consolidation and integration (both vertical and horizontal) proceeded with dizzying speed and transformed the economy. By the end of the 1890s, oligopoly, virtual monopoly or shared monopoly characterized American industry. In many cases, firms in oligopolistic or monopolistic industries enjoyed economies of scale and scope, along with increased production and lower prices for consumers. However, predatory actions and other negative consequences of market power produced a popular clamor against the trusts. Ida Tarbell, Frank Norris, Upton Sinclair and many others gave voice to this protest.

As protests rose, the demand for public control of big business became a reality. These demands for public restraints on business led to the passage of the Interstate Commerce Act of 1887, the Sherman Anti-Trust Act in 1890 and the Meat Inspection Act of 1891. Later the 1904 prosecution of the Northern Securities Company and the creation of the Bureau of Corporations within the Department of Commerce occurred and were the cornerstones of Theodore Roosevelt's "Trust Busting" policy. The Sherman Act remains today the foundation of United States anti-trust policy. However, neither enforcement nor interpretation of anti-trust law has been consistent over the course of the twentieth century. As well, anti-trust action continued to be in the popular media in the twentieth and now the twenty-first century as concerns over increasing concentration in a variety of industries takes on momentum. Even though this case has now been settled, the decision to pursue monopoly charges against Microsoft is the most publicized recent example.

HYPOTHESIS

This paper explores the hypothesis that the meat packing industry has had an evolution that, even with public policy changes, continues to push the industry towards oligopoly (at times monopoly) and from all appearances will continue to do so. While the firms today are not the same as they were in 1890, 1945, or 1970, they continue to be highly motivated by consolidation and integration. The paper will begin by tracing the historical development of the meatpacking industry, the regulatory response to the industry, and finally discuss the literature and current consolidation within the industry. After doing this, the paper hopes to reveal that there is a common thread that runs through the meatpacking industry and that is that economies of scale and cost advantages of integration are the driving force in 2000 just as they were in 1900.

MEAT PACKING: HISTORICAL DEVELOPMENT AND REGULATION

The meatpacking industry is an interesting case study in industrial organization and governmental response to big business enterprise. The industry has experienced several periods of structural change and consolidation during the past 120 years. Meatpacking was part of each of the great merger waves, the 1890s, 1920s, 1960s and later in the 1970s and 1980s. Each merger wave was significant to the industry and lead to the current structure exhibited today.

In the later half of the nineteenth century, meatpacking firms developed into a national industry, with consolidated control and a changed market structure. Oligopoly (collusive or not) characterized the industry in the twentieth century's first decade. The major firms assumed position among the largest industrial enterprises in the U.S. and world. A changing environment moved the center of the industry westward from the Ohio River Valley to Chicago. The rapid urbanization of the nation, coupled with the growth of herds of animals on the western plains, the extension of the

railroads, both trunk line roads to the Eastern cities and roads to the west, and the development of dependable refrigeration, made possible the development of a national market.

Gustavus Swift led the development of the national industry. He moved to Chicago in the mid-1870s and quickly set out to establish a nationwide processing, distributing and marketing organization. His desire to build a major national business enterprise led to vertical consolidation. Swift & Company grew to include stockyard ownership, slaughter, processing, distribution to branch houses, and sales at both the wholesale and retail levels. As the twentieth century began, five firms led the industry with Phillip Armour's, Armour & Co., and Swift & Co. being the largest. Armour & Co. ranked number eight among U.S. industrial firms in 1909 in value of assets; Swift & Co. was number thirteen (Chandler, 1962). The big five controlled almost 100 percent of the refrigerated, dressed beef production in 1906 (Libecap, 1992). Swift and Armour by World War I had added major meatpacking plants in Omaha, St. Joseph, Ft. Worth and other cities, and increased their national market share.

At the national level, the first regulatory response to consolidation in the meatpacking industry came in 1891. The passage of the Meat Inspection Act of 1891 was a product of the fundamental changes that had occurred in the meatpacking industry during the 1870s and 1880s. Libecap contends that the consolidation of market power in the hands of four Chicago meatpackers played a prominent role in the enactment of both the industry specific legislation in 1891 and the Sherman Anti-Trust Act of 1890 (Libecap, 1992). In 1905 the Supreme Court upheld the government's anti-trust pursuit of the "Beef Trust," and used the industry to advance the stream of commerce concept to broaden the scope of anti-trust action. However, the difficulty involved in measuring true concentration within the industry spared the big five the trust busting prosecutions suffered by U.S. Steel and Standard Oil in the twentieth century's second decade. Although, public protest over Upton Sinclair's, The Jungle, helped spur passage of the Meat Inspection Act of 1906. This fictional portrayal brought a genuine desire to rid the industry of abuses.

Concerns over concentration in the industry continued and led Congress to initiate a full-scale investigation of the meatpacking industry after World War II. This oligopolistic structure remained intact throughout the 1950s. In 1959 Armour & Co. and Swift & Co. were among the top 100 U.S. industrial firms based on the value of assets (Chandler, 1962). However, structural change in the industry occurred as union strength waned and technological improvements became available in the 1960s and 1970s. Research by Craypo reveals that union strength peaked in the meatpacking industry during the 1960s and through the mid-1970's (Craypo, 1994). By the early 1970s, 95 percent of hourly workers in multiplant meatpacking plants, operating outside the South, were represented by the United Packing House Workers of America and Amalgamated Meat Cutters Union. However, by 1988 unionization had fallen to approximately half of its 1963 level, and nominal wages in the 1990s fell below the hourly wage in 1960 (Huffman & Miranowski, 1996).

The oligopolist of the first half of the twentieth century became pawns in the wave of conglomeratization that swept the nation in the 1960s and 1970s. This conglomerate merger wave saw unrelated firms and industries joining together in business mergers that had not been seen before. The meatpacking industry, along with agricultural industries in general, was not excluded from this period of conglomerate mergers. Wilson & Co. was bought by LTV, and its assets divided into a meatpacking firm, a sporting goods firm and a pharmaceuticals firm (Brown, 1972). Armour & Co. became the target of Gulf & Western; was acquired first by General Host and later became part of Greyhound (Sobel, 1984).

Research by Ussif and Lambert reveals some of the changes that were occurring in the industry during this time (Ussif & Lambert, 1998). Their research concluded that monopoly power in the meatpacking industry peaked from 1974-1978. This peak corresponded with a period of rapidly increasing per capita beef consumption. In addition, their research reveals that by 1978 the Lerner index in meatpacking was .14. However, in 1979 monopoly power in the meatpacking industry fell sharply and stabilized for a period after 1980. They additionally conclude that monopsony power in the meatpacking industry peaked in 1962 and again in 1973.

A new generation of meatpackers emerged in the 1980s. Armour & Co. and Swift & Co., along with Monfort of Colorado, and a host of processing firms became part of the Omaha-based Con Agra food combine. Iowa Beef Packers, Inc. (IBP) grew from a small firm on the fringe of the national market into one of the largest in the industry. Cargill, the Minneapolis agricultural product firm, moved its Excel meatpacker into a position of prominence. The industry, as the twenty-first century begins, is more concentrated than at any time in the twentieth century. By the 1990s, three major firms ruled the pork and beef industry. They replaced the big five of an earlier time. The three major firms are also oligopsonists (perhaps exercising virtual monopsonistic prerogatives). Thus, as history repeats itself, concerns have arisen about increasing concentration and control within this industry.

The concern over increasing integration in the industry gained momentum in the 1990s leading Congress to once again investigate and attempt to regulate the meatpacking industry. The USDA was ordered, in the early part of the decade, to investigate increasing concentration in meat-packing. Two pieces of legislation were introduced in 1999 aimed at controlling or preventing future mergers and other anti-competitive behavior within the meat industry. One Senate Bill would have temporarily prevented mergers among firms in the grain, livestock, seed, fertilizer and food processing industries. The second Senate proposal would have made it illegal for meatpackers to own livestock. Several Senators argued that the U.S. meat industry once again exhibited characteristics of monopoly power that threatened consumers and other businesses involved. Agriculture Secretary Dan Glickman summed it up when he argued:

> It would be simplistic to say that consolidation, on the whole, is a good or bad thing. Consolidation can lead to more efficient, lower-cost production. But competition is the life-blood of the free enterprise system, and the fewer options available in the marketplace, the less innovative the economy. What's more, we should all be concerned when the trend Toward larger and fewer agricultural operations threatens to drive the small operator out of business. We can't allow a system of agricultural Darwinism to prevail, with the survival of the fittest becoming survival of the largest (USDA Backgrounder, 1999).

The importance of the industry as the twenty-first century begins is demonstrated in part by its scope. The U.S. Meat and poultry industry employs nearly 500,000 workers in 44 states; employing more than aerospace manufacturing, newspaper publishing, radio and television broadcasting, the oil and gas industry and the consumer electronics industry. The industry operates over 2,700 livestock slaughtering plants, which are important in the economies of such states as Kansas, Nebraska, Texas, Iowa, Minnesota, and Virginia. In 1994 meatpackers slaughtered 46 million head of cattle, 9.5 million calves and over 100 million hogs. Red meat production topped 42 million pounds in 1994. As well, the total export value of U.S. meat and related products in 1994 was $9.969 billion (www.meatami.org, 2001).

The foregoing discussion of the historical development of the meatpacking industry and its structure shows both the historical significance of the industry and the continuing importance of the enterprise. However, the question of why the industry quickly became oligopolistic, and is even more concentrated today, remains important. In addition, a significant body of research, A.D. Chandler's Strategy and Structure to name only one, points to the value of addressing this question and analyzing the results across industries (Chandler, 1962).

CONCENTRATION, INTEGRATION AND MARKET STRUCTURE

There has been a significant amount of literature emphasizing the concentration and market power in the meatpacking industry. Many of these studies have focused on statistical analysis measuring concentration and its significance to the industry in recent history. Azzam and Anderson reported, based on earlier studies, that concentration could impact the prices charged and quantities sold by firms. Their research also noted the importance of technological development and firm rivalry on changes within the industry (USDA GIPSA, 1996). Technological changes in this industry have been a major factor in improving cost advantages and economies of scale. From a historical perspective some of the most important technological changes in

the meatpacking industry have been: (1.) The development of cellulose casings and skinless hot dogs in the 1920s. (2.) The development of the refrigerated rail car/truck in the 1930-40s. (3.) The development of vacuum packing in the 1950s, and (4.) The development of boxed beef in the 1960s. These changes, along with changes in Federal regulations and anti-trust laws, have allowed for significant structural changes in the meatpacking industry (Food Engineering, 2000).

As these technologies improved, beef processing moved from large cities like Chicago in the 1920s to small cities such as Garden City and Dodge City, Kansas, and Dakota City and Schuyler, Nebraska. The move to towns and cities in rural America was designed to replace outmoded plants with new specialized facilities closer to supplies, and provided the added benefit of lower labor costs. Huffman and Mirankowski confirm that concentration in large specialized operations occurred as refrigeration, processing and packaging for meat improved (Huffman & Miranowski, 1996). Moreover, Ollinger, MacDonald, Handy and Nelson confirm that in the twenty-five years from 1967 to 1992, the meatpacking industry experienced a general shift to greater plant scale (Ollinger, MacDonald, Handy & Nelson, 1996). Looking back on all of these developments there is general agreement in the research that the livestock/meat industry has witnessed substantial changes in production processes and industry concentration (Khan & Helmers, 1997).

Barkema, Drabenstott, and Novak argue that today's changing consumer demand, along with efforts to trim costs across the industry is driving consolidation in meat processing (Barkema, Drabenstott, & Novak, 2001). They contend that profit margins in the beef and pork industries have been eroded by increased competition from a highly concentrated poultry industry. This pressure on the beef and pork industries results from one of the basic tenets of Supply and Demand. As the demand for poultry increases, a substitute product for beef and pork, more pressure is placed on the beef and pork industry to consolidate and find cost-saving measures. Additional research confirms that changes in consumer demand have been a significant factor in the recent structural transformation of the meat industry (Bastian, Bailey, Menkhaus, & Glover, 1994).

Risk aversion is the focus of Khan and Helmers discussion of vertical integration in the beef industry. They conclude that: (1.) Improved efficiency, (2.) Reduced uncertainty of input and output prices and, (3.) Reductions in operations cost have moved the firms in the industry to increased vertical integration (Khan & Helmers, 1997). At the same time, Featherstone and Sherrick cite the integrated firm's ability to gain market advantage, increase efficiencies, reduce uncertainty and gain cost advantages (Featherstone & Sherrick, 1992). Additional research focuses on the idea of "captive supplies" and suggests that backward integration can produce efficiency gains and reduce a firm's acquisition price for externally supplied raw inputs (Love & Burton, 1997).

It is apparent that the meatpacking industry has undergone a number of structural changes in the twentieth century. One way to define structural change is change in the number and/or size of firms in an industry (Bastian, Bailey, Menkhaus, & Glover, 1994). The number of firms in the meatpacking industry declined in the late nineteenth century while the size of firms increased dramatically. This process has occurred again in the late years of the twentieth century. Structural change is not limited to the above definition and can include many other variables including location, extent of unionization, and level of horizontal and vertical integration. Each of these has been a part of the evolving structure of the industry over its entire history and certainly over the past thirty years.

Within the industry one of the easiest ways to measure degrees of monopoly power, or divergence from perfect competition, is to examine concentration ratios. Admittedly, concentration ratios have several limitations. For example, some industries appear to have low concentration levels nationally, but in fact exert significant market control locally and/or regionally. As well, industries can exhibit high degrees of concentration even though the four or eight largest firms have significant levels of interfirm competition. Despite these limitations, concentration ratios are an important tool of analysis in determining the level of monopoly power in an industry or market.

Table One, on the following page, presents initial data on the concentration ratios within the meatpacking industry. SIC (Standard Industrial Classification Index) codes 2011 and 2013 represent several

different categories of meat industrial firms including canned meats, meat extracts, and meatpacking plants. As the data indicates, SIC firms classified under 2011 have much higher concentration ratios than those under 2013. SIC code 2011 includes meatpacking firms. Based on these figures, it can be argued that this industry exhibits at least a moderate measure of concentration. This is further supported by the data which reveals that this industry has almost 1300 firms, of which the eight largest firms account for less than 1 percent of this total but account for 66 percent of the value of shipments.

Table I: Concentration Ratios by SIC Code

SIC Code	Number of Companies	Shipments Millions $	Percentage of Value of Shipments Accounted for by Largest Firms			
			4	**8**	**20**	**50**
2011	1296	6958.7	50	66	79	88
2013	1128	5478.3	25	33	46	62

Source: U.S. Census Bureau. Manufacturing Concentration Ratios. Economic Census, 1992.

Table Two, below, looks specifically at the beef packing industry. Overall, the trend from 1980 to 1995 is increasing concentration. In fifteen years, significant increases in four firm concentration ratios have been exhibited in the steer/heifer, cow/bull, cattle and boxed beef segments of the beef industry. In fact these four firm concentration ratios have been climbing since the early 1960s. For instance, the four firm concentration ratios in beef slaughter were 26 and 25 for 1967 and 1977 respectively (Ollinger, MacDonald, Handy & Nelson, 1996). By 1995 the four firm concentration ratios were 79.3, 23.5, 67.3 and 84.3 respectively in the steer/heifer, cow/bull, cattle and boxed fed beef markets. This establishes that not only is there moderate to substantial concentration in the industry, but that concentration has been increasing.

Table 2: Four-Firm Concentrations: Beef Packing				
Year	Steer/Heifer	Cow/Bull	Cattle	Boxed Fed Beef
1980	35.7	9.7	28.4	52.9
1985	50.2	17.2	39	61.5
1987	67.1	20	54.2	79.5
1990	71.6	20.4	58.6	79.3
1993	79.8	24	66	82.7
1994	80.9	26.3	67.8	85.7
1995	79.3	23.5	67.3	84.3

Source: U.S. Department of Agriculture, Packers and Stockyards Statistical Report: 1995 Reporting Year, GIPSA 97-1, September 1997, Tables 27, 28, and 29.

The Herfindahl-Hirshman Index (HHI) is another useful measure of concentration and overcomes many weaknesses of the concentration ratio measurement. This measurement is considered superior to concentration ratios because it takes into account the number of firms and the relative distributional shares of the market held by all firms, not just the largest. The HHI is calculated by taking the sum of the squares of each firm's percentage share of the market. Thus, if 200 firms have a 1-percent share, the HHI will equal 200. If 1 firm has 100 percent of the market, the HHI equals 10,000. The Department of Justice and Federal Trade Commission have set guidelines using the HHI to determine whether mergers in an industry will have anti-competitive results. Below, Table Three reveals the guidelines set by the Department of Justice and the Federal Trade Commission. The basic guidelines set by these agencies reveal that both for moderate and high concentration industries there are potential competitive concerns when mergers occur.

TABLE 3: DOJ and FTC Merger Guidelines	
Post-Merger HHI below 1,000	This is considered unconcentrated
Post-Merger HHI between 1,000-1,800	This is considered moderately concentrated
Post Merger HHI above 1,800	This is considered highly concentrated
Source: USDA, Concentration Measures for the Beef Packing Industry. TB-1874, 1996.	

The HHIs illustrated in Table Four reveal the significant increase in market concentration that has occurred in the beef-packing industry over the fifteen-year period from 1980-1995. All segments of the beef-packing industry have exhibited a significant increase, with Steer/Heifer, Cow/Bull, and Cattle exhibiting the largest percentage change in the HHI. (See Table IV below.). The HHI for the Steer/Heifer and Boxed Beef segments indicate a level of concentration such that the Department of Commerce would likely deny a request for further mergers within that segment of the industry. As well, the Cow/Bull segment would be considered moderately concentrated and would warrant further research. In 1995 216 plants slaughtered 27 million heads of steers and heifers. The vast majority (80%) were slaughtered in 22 plants. The same was true for cows and bulls; 71% of the 6.5 million cows and bulls were slaughtered at 26 plants (USDA Packers and Stockyards Statistical Report, 1995).

If Philip Armour came back today to see his industry he would revel in the changed technology and production methods. However, the number of competitors in the industry would not surprise him. He would possibly only be surprised by their names. In 1890, Armour, Swift, Morris and Hammond, the 4 largest Chicago meatpackers, slaughtered 89 percent of the cattle in Chicago and by 1904 these firms controlled 50 percent of the national meatpacking market (Libecap, 1992). In order to maintain and improve this market share the Chicago meatpackers were entrepreneurs in the use of refrigeration and large centralized slaughterhouses. By 1917, the major Chicago packers controlled 93 percent of the total U.S. market for the storage

and distribution of dressed beef, as well as refrigerator cars to transport the beef around the country (Libecap, 1992). By several estimates, the U.S. meat industry was the first or second most valuable U.S. industry for the thirty-year period, from 1880-1910. While the meat industry today is certainly not the most valuable U.S. industry, it is still significant and more importantly, provides commodities that consumers need and want. Meatpackers today, as those before them, have been able to increase their market share through changes in technology, plant scale, and merger activity. As a result, the four largest firms across the different sectors of beef packing control between 24 percent and over 80 percent of their respective markets. Thus, just as in 1910, this industry is characterized by its high levels of concentration with a few large firms controlling the market.

Table 4: Herfindahl-Hirshman Index

Year	Steer/Heifer	Cow/Bull	Cattle	Boxed Fed Beef
1980	561	89	361	1,220
1985	999	160	617	1,527
1987	1,435	206	946	1,981
1990	1,661	223	1,118	1,988
1993	2,052	276	1,393	2,236
1994	2,096	320	1,460	2,340
1995	1,982	293	1,437	2,208

Source: U.S. Department of Agriculture, Packers and Stockyards Statistical Report: 1995 Reporting Year, GIPSA 97-1, September 1997, Tables 27, 28, and 29.

CONCLUSION

It is acknowledged that all firms across all industries seek to minimize cost and improve their market share. This is an enduring feature of our capitalist economy and the drive for profits. However, this research reveals the possibility that some industries may experience this pressure to a greater extent than others may. If this is the case, then some industries may have a natural drive or push towards oligopoly and monopoly structure.

Meatpacking was a significant national industry as the twentieth century began and remains a major economic force at the start of the twenty-first century. In 1900 concentration, vertical integration and oligopoly characterized the industry. The structure of the industry in 2002 also features concentration, vertical integration and oligopoly. In fact, the level of concentration has increased. The industry's structure then and now has been driven by a national market strategy, by the necessity to minimize costs, and an aversion to risks. As well, firms within the industry continue to pursue economies of scale and scope. It appears that in the case of the meatpacking industry, especially beef and pork, history sometimes repeats itself.

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