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# THE OHIO ASSOCIATION OF ECONOMISTS AND POLITICAL SCIENTISTS

## *Mission*

The Ohio Association of Economists and Political Scientists is a not-for-profit, professional association of practitioners, academics, and students in economics, political science, and related fields. It is devoted to the understanding and dissemination of knowledge, and to the facilitation of dialogue regarding economic and political concepts and events. Our emphasis is on how the interaction of these two social sciences impact Ohioans.

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## **EDITORIAL POLICY**

The *Journal of Economics and Politics* is a scholarly journal directed to a broad audience of economists and political scientists. It is sponsored by the **Ohio Association of Economists and Political Scientists, OAEPS**, but is open to contributions from non-members as well as from members. It has a particular interest in the publication of articles dealing with Ohio and with the region, but it is a general journal. No particular method or approach is favored over another.

## **Instructions for the Submission of Manuscripts**

Send the manuscript to the editor-in-chief via e-mail. The manuscript should be a clean copy, single-spaced print, using MS Word for Windows. Complete manuscript preparation instructions are available from the Editor-in-Chief once the paper is accepted for publication. The *Journal of Economics and Politics* is a refereed journal. Refereeing is double-blind; therefore, the name(s), affiliation(s), and address(es) of the author(s), title of the paper, and other identifying statements should be on a separate page. This page will be removed before sending the manuscript to the referees. The first page of the paper should contain the title and text, but no reference to the author(s) that would allow the referees to identify the author(s) or affiliation(s). As a general rule, the paper should be approximately twenty pages long. Under special circumstances, substantially longer papers may be considered for publication in more than one part. Short research notes of two or three pages are encouraged. Mathematical notation, figures, and tables should be held to the minimum required for the presentation of the material. Use Word formatting for tables. Author(s) of papers accepted for publication must provide the entire manuscripts, including figures, charts, and tables, in one file accessible by MS Word for Windows. This can be e-mailed to the new Editor-in-Chief, Elizabeth Stiles at [estiles3@gmail.com](mailto:estiles3@gmail.com). Notes and references should be at the end of the manuscript rather than in the text. Attribution extent and style vary by profession and custom. Consult this issue of the *Journal of Economics and Politics* for the style used in attributions.

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### LETTER FROM THE EDITOR

Volume 20 of the *Journal of Economics and Politics* provides a variety of papers from the fields of economics and political science. The issue includes several papers that were originally presented in the OAEPS fall conference, where feedback early on has helped authors move their papers forward to the publishing state. We encourage our readers to attend the conference for a day filled with interesting work and presentations and the chance to publish in our journal. Please visit our website at <http://www.oaeps.org/> for more details about our upcoming conference.

Two changes will shortly ensue. First, beginning this summer, my term as Editor-in-Chief is over and Elizabeth Stiles from John Carroll University will be the *JEP*'s new Editor-in-Chief. Dr. Thomas Sutton of Baldwin-Wallace College will assume the Associate Editor of Political Science position vacated by Dr. Stiles and Dr. Peter VanderHart from Bowling Green State University will continue in his current role as Associate Editor of Economics. Please note that any future submissions should be directed to Dr. Stiles.

Second, the Board has recently voted to award the Best Young Scholar Award. The award is selected from the published papers in the *JEP* each year. Awardees must either be working toward their terminal degree or be in tenure-track status to be eligible for the award. This year, we have selected Dr. Jen Ziemke of John Carroll University for her paper, *Turn and Burn: Loss Dynamics & Civilian Targeting in the Angolan War*. Dr. Ziemke is also the Co-Founder and Co-Curator of the International Network of Crisis Mappers and a Fellow at the Harvard Humanitarian Initiative. We congratulate Dr. Ziemke on this achievement and look forward to next year's crop of excellent papers.

Finally, note that in Volume 19, there was a page of references missing from *Student Retention At Ashland University: A Statistical Study* by Robert P. Rogers. Please contact Dr. Rogers directly at [rogers1@ashland.edu](mailto:rogers1@ashland.edu) for a copy of the missing references.

Sincerely,

Mary Ellen Benedict  
Distinguished Teaching Professor  
Department of Economics  
Bowling Green State University  
Bowling Green, OH 43403



**A MODEL OF FIRM GROWTH AND CONTRACTION  
IN RICHLAND COUNTY, OHIO**

**ROBERT P. ROGERS<sup>1</sup>**

DAUCH COLLEGE OF BUSINESS AND ECONOMICS  
ASHLAND UNIVERSITY

**ABSTRACT**

A major concern of economic development practitioners is what kind of firms will flourish in their localities. From data collected in Richland County, Ohio, this paper estimates a model that relates the firm employment growth and contraction to a set of firm characteristics suggested by economic theory and our knowledge of county conditions. The model hypothesizes that firm employment growth or contraction is related to firm size and age, along with a group of variables depicting economies of agglomeration, product demand conditions, the internal situation of the firm, and its labor supply conditions. The results indicate that size, economies of agglomeration, demand conditions, and firm attitudes toward the locality were the strongest factors impacting on locality firm growth.

## **I. INTRODUCTION**

In the United States and other countries, business firms often move from one locality to another. Local political leaders faced with outgoing companies have to find new firms to hire the laid-off workers. Thus, a major concern of economic development practitioners is what kind of firms will flourish in their home towns. This problem is especially acute in the Rust Belt areas from which many of the old basic industries have moved south or overseas. Thus, it would be helpful to develop a way to determine which firms will thrive in given localities. One such area is Richland County, Ohio whose principal city, Mansfield, is an old center of metalworking and assembly plants.

From data collected in Richland County, we develop an empirical model that relates the characteristics of given firms to their success in Richland County. The indicator of success is the firm's employment expansion or contraction in the county. In 2003, the Richland Development Corporation conducted a survey in which the 91 major employers of Richland County answered a number of relevant questions about their businesses. (For information on the survey and data, see Richland Development Corporation, 2003.) In this paper, we develop and test a model that relates these data to the firm employment growth or contraction in the four years subsequent to the survey (2003–2007). This model or a variation on it can be used for other localities.

To undertake this task, we first give some background on Richland County, Ohio, and then we examine the literature on firm growth and location to convey an idea of how to go about the task. After that, we describe our model and its variables. Last, we present the results and draw some conclusions.

## **II. RICHLAND COUNTY, OHIO**

Richland County is located in north central Ohio. Mansfield, its largest city, has a population of 50,627. There are also two smaller cities and a number of other Ohio local government units such as villages and townships. Among these municipalities, the largest are Madison (population 14,680), Shelby (population 9,821), Ontario (population, 5,303), and Lexington (population 4,165). While the county has many farms and green spaces, economically, it is still an industrial area.

Historically, Richland County has been the home to large industrial plants. In the past, it has hosted large manufacturing employers such as General Motors, Empire-Detroit Steel, White Westinghouse, Ohio Brass, Mansfield Tire and Rubber, and Tappan. As of 2007, only the first two remained, the second being now part of AK Steel. A number of smaller manufacturers have survived and new ones have sprung up. Among those are Shelby Tube, now part of Arcelor Mittal, Jay Industries, Newman Technology, Gorman-Rupp, and Shiloh Corporation.

The major question facing the county leaders is how can they expand or at least, maintain the area's employment. They need to know what kind of firms would thrive in this county. To help them ascertain the right firms to keep in or attract to Richland County, a survey of the characteristics and opinions of 91 of its major employers was undertaken in 2002 and 2003 (Richland Development Corporation, 2003). From the information in this survey, we develop an empirical model to show the attributes of the firms that grew and thrived in Richland County. This is a model that can be used by localities and regions in similar situations. Before describing this model, we examine the literature on firm location to put our effort in context.

## **III. REGIONAL ECONOMICS AND OTHER LITERATURE**

Several lines of the literature are useful to one developing a way to model the decision process of a firm on whether to expand or contract in a given places such as Richland County. One set of papers focuses on the growth of individual firms. Simon and Bonini (1958), Jovanovic (1982), and Evans (1987a and 1987b) develop theoretical and empirical models that relate firm growth to size and age; the latter applies this kind of a model to a sample from the United States Small Business Administration. Two other papers

apply the model to larger samples; Kumar (1985) focuses on manufacturing firms in the United Kingdom, and Hall (1987) applies the growth model to manufacturing firms in the United States. Following up on the models of Evans, other papers introduce location variables into growth models that examine the impact of local government policy. Gabe and Kraybill (2003), using an Ohio sample, examine the effects of local policies to attract industry on firm location decisions. Variyam and Kraybill (1994) emphasize the impact of managerial inputs on the growth of small firms in rural Georgia. All these papers suggest way to develop a model for matching a firm with an optimal locality.

Two other strands of the literature tie locality characteristics to firm location decisions. The first treats the locality as an observation and relates the production and size of the locality outputs and inputs to the characteristics of the region and certain policy variables. Abdel-Rahman (2000) develops a theoretical model of the forces leading some localities to be “company towns” and others to be multi-firm localities. Bosca, Escriba, and Murgui (2002) relate aspects of the public good supplies to the economic growth and performance of Spanish regions. Brown, Hayes, and Taylor (2003) relate the economic growth of U. S. states to their government policies. Kunce, Gerking, Morgan, and Maddux (2003) relate state taxation to the exploration and production of oil in states in the United States.

Another strand of the literature develops models of firm location decisions in which the locality characteristics are related to the locality’s share of the total number of new firms within a country or region. Carlton (1983) examines models that influence the share obtained by given regions of firms in certain economic sectors. Gabe and Bell (2004) use a model that relates the share of new businesses in counties in the state of Maine to the incidence of local taxes and government spending levels. In two papers, Guimaraes, Figueirdo, and Woodward (2003 and 2004) develop a theoretical model of firm location choices and apply it to firm behavior in the United States. They use each state’s share of new industrial plants as the dependent variable and a set of state characteristics as the independent variables.

These papers suggest modeling techniques and variables that can be used in a model of firm growth in Richland County, but their models are not directly useful for our purposes. In the growth papers, the firm is the observation, but the samples cover wide areas such as nations or states where varying local conditions help determine the differences in growth rates among the firms. The location papers with the locale as the observation either use a production function for the locality or the share of new firms in the area. They, then, use a set of local condition variables to determine the relative success of different regions. In contrast, this paper employs a firm growth model drawn from a sample of firms in only one area, Richland County, Ohio, to find the firm characteristics that lead them to grow in that or similar areas.

#### **IV. THE THEORETICAL AND EMPIRICAL MODEL**

To ascertain these characteristics, we set up a model of firm and/or plant growth. Simon and Bonini (1958) and Jovanovic (1982) develop a theoretical model explaining the variation in the growth rates of a sample of profit-maximizing firms. Kumar (1985), Evans, (1987a and b), Hall (1987), Variyam and Kraybill (1994), and Gabe and Kraybill (2003), apply the model to a number of samples. In those papers, the model relates firm growth to firm size and age and a group of other variables. The following equation from Evans (1987a) can be used as a departure point:

$$S_{t+1} = G(S_t, AGE) S_t + e_t \quad (1)$$

$S_t$  equals the size in employment of the firm and/or plant in Richland County in period  $t$ , and  $AGE$  equals the age of the firm’s operation in the county.  $G(\cdot)$  is a nonlinear function of the firm’s size and age, and the residual,  $e_t$ , can be modeled as a function of the various firm characteristics that affect its presence in the Richland County. In Eq.(1)  $e_t$  is a random variable and thus it is independent of  $G(\cdot)$ . This model can be converted into this following growth function

$$S_{t+1} / S_t = G(S_t, AGE) + B X_t + u_t. \quad (2)$$

Here  $X_t$  is a vector of variables reflecting the characteristics that affect growth in Richland County;  $u_t$  is, of course, a residual after taking into account the measurable firm characteristics. The variables in the  $X_t$  vector can be either continuous or dichotomous. Before examining the  $X_t$  vector, we should find a way to represent the form of  $G(\cdot)$ . Using the Taylor series method (Greene, 2008, p. 277 and 979), equation (2) can be approximated by this linear function:

$$S_{t+1}/S_t = g_0 + g_1 S_t + g_2 AGE + g_3 S_t^2 + g_4 S_t * AGE + g_5 AGE^2 + B X_t + u_t \quad (2a)$$

This equation is estimated below; to do this, we first define the variables,  $S_{t+1}$ ,  $S_t$ , and  $AGE$  along with components of vector,  $X_t$ , and, second, deal with a number of econometric problems. Our initial sample consists of the 91 firms in the 2002 in The Richland Development Corporation survey (Richland Development Corporation, 2003), but some observations will be eliminated due to data availability problems. The data for size for 2007 comes from estimates by the Richland Development Corporation (2009), the Manta Media Inc. (2009), and conversations with Tom Prendergast at North Central College, an expert on the Richland County employment.

We can divide the variables into groups. The first group consists of  $S_{t+1}$ ,  $S_t$ , and  $AGE$ , those variables connected to the firm growth model as they were developed by Evans (1987) and others.  $S_{t+1}$ , and  $S_t$ , are defined as the number of employees in the observation firm in years, 2007 ( $t+1$ ) and 2003 ( $t$ ). This means that the length of our period is four years. This breakdown is necessary because we do not have employment for each year between 2003 and 2007.

The other variable suggested by the growth literature variable in this group is  $AGE$ . Firms that have lasted a long time also have a greater survival capability (Evans, 1987a and 1987b, and Gabe and Graybill, 2003). Two problems exist with the  $AGE$  variable; first, for most firms it is not available, and second, many establishments and plants in Richland County have changed hands, and often they have been moved from one industry to another. Some facilities have been run by so many different managements that under those different regimes they could really be considered different firms. To depict this situation, a variable representing recent management changes is included in the analysis instead of  $AGE$ . It is  $MANCH$ ; a dummy variable equaling one if the company's ownership or top management has changed in the 18 months before survey or if a change is anticipated and zero otherwise. With this  $G(\cdot)$  is altered changing equation to the following:

$$S_{t+1}/S_t = g_0 + g_1 S_t + g_2 MANCH + g_3 S_t^2 + g_4 S_t * MANCH + B X_t + u_t \quad (2b)$$

The approximation of  $G(\cdot)$  is still reflected in the squared  $S_t$  term and the interaction term, ( $S_t * MANCH$ ). Since  $MANCH$  is a dummy variable, its squared term is redundant. Both  $S_t$  and  $MANCH$  could have nonlinear impacts on the dependent variables because of these interactions.

$X_t$  is the vector of variables impacting on the residual,  $e_t$ , of the growth model. These variables reflect conditions in the period  $t$ , 2003, that are hypothesized to impact on firm and/or plant growth or contraction in the period between  $t$  and  $t+1$  (2003 and 2007). These variables can be divided into four categories. The first category is made up of variables reflecting the economies of agglomeration, the reduction in cost due to similar companies operating in a locality. The second category is composed of variables reflecting the demand conditions for a given firm's product. In the third category are variables reflecting the internal situation of the firms, and the fourth category consists of the variables representing the labor supply conditions facing the sample firms. Thus, we can set up an encompassing model with  $X_t$  consisting of the following vector:

$$X_t = (\text{NAICSE, N332, DVS, UPCYCLE, DOWNCYCLE, NNEWP, MSUP, LOCAL, REGION, FACI, EXPORT, INTERN, U15, RDRICH, ATT, WAVH, WAVL, WQH, WQL, WSTH, WSTL}).$$

All of these variables have been shown in the Regional Science and Industrial Organization literature to have a possible influence on the firm decision-making process. These variables, along with  $S_{t+1}$ ,  $S_t$ , and MANCH, are defined in Table 1. Now we examine the variables in the  $X_t$  vector.

The theory of economies of agglomeration suggests two variables. Having a number of firms in the same industry in a given area often allows firms to learn from each other and to make better use of common resources (Porter, 1990 and 1994 and Feser, Sweeney, and Renski, 2005). Consequently, a large number of firms in a given industry in a local area can lower the costs of any given firm. Two variables are used to represent these phenomena.

One is NAICSE; it is the total number of local employees in the sample firm's particular industry as represented by its North American Industry Classification System (NAICS) group. A large number of people working in a given industry in a given locality allow companies to use local resources to develop production techniques and improve production quality.

The second variable arises from the success of metal fabricating firms in Richland County (Robinson, 2002). Mansfield has traditionally been center for metal fabricating firms such as Gorman-Rupp, Shelby Tube, and Tappan. With the large number of workers in this industry, it is likely that economies of agglomeration could exist making metal fabricating very likely to expand in Richland County. Thus, we add a dummy variable, N332, equaling one for firms in NAICS 332, the North American Industry Classification System group for metal fabricating firms, and zero, otherwise.

The next variables to be discussed are connected to demand. Many industry observers have concluded that products go through cycles starting as emerging industries when the product is first developed, then, changing to growing industries when the product is becoming well-known and accepted. Later, the industry or product enters its mature state when the market becomes saturated. Finally, the product may enter a declining state as new products replace it (Porter, 1980, Appendix; Abell and Hammond, 1979; Day, 1977; and Salter and Weinhold, 1979). To account for this phenomenon, one continuous variable, DVS, and the two dichotomous variables, UPCYCLE and DOWNCYCLE, are included in the model. DVS is the ratio of the sample firm's national NAICS value of shipments in the 2007 Economic Census to that of the 2002 Economic Census. This variable gives an indication of economic growth or contraction in the firm's wide sector. UPCYCLE equals one for firms with key products in the emerging or growing parts of the cycle and zero otherwise, and DOWNCYCLE, equals one for firms with key products in the declining parts of the cycle and zero, otherwise. Besides the categories of rising demand products and declining products were products in the middle of the cycle with stable demands, meaning that UPCYCLE and DOWNCYCLE are not perfectly collinear. These two variables give us an idea of changing demand conditions in the narrow niches in which the sample firms compete.

Firms that are growing and developing new products are more likely to expand or at least maintain their employment. If a company's main product has an increasing market share, then, it is likely that it will expand in the Richland County area. To account for this possibility, the variable MSUP is added to the model. It equals one if the market shares of the company's key products are increasing, and zero otherwise. To portray a firm's development of new products, a variable, NNEWP, is added to the model. It is a dummy variable equaling one if the firm anticipates new products/services in the next two years and zero otherwise.

The geographic extent of the firm's major product's market could also affect its expansion or contraction decision. Firms selling into a local or regional market are more tied to the locality in which they operate than firms selling into national and international markets. Consequently, the variables, LOCAL and REGION, are included in the model. LOCAL equals one if the company's primary market is local; and zero otherwise. REGION equals one if the company's primary market is regional; and zero otherwise. These variables could have either a negative or positive effect on the likelihood of the firm expanding or maintaining its employment in Richland County; consequently, two-tailed tests are used in assessing their

impact. Richland County also has a number of firms operating in national and international markets, which have neither regional or local focuses.

Other demand variables that could impinge on the expansion or contraction decision of the firm arise out of the competitive situation. Firms with a strong competitive position are apt to export their products; to account for this tendency, we add the variable, EXPORT, a dummy variable equaling one if firm export sales as a percentage of total sales are increasing or stable and zero otherwise. In contrast, if foreign firms control a large market share, the firm facing such competition may lower employment in American counties such as Richland County. Therefore, we add the dummy variable, INTERN; it equals one if the percentage of U.S. market of the sample firm's primary product controlled by international competitors is greater than 20 percent, and zero otherwise.

While only partly a demand issue, the capacity utilization rate of a firm may influence its expansion decisions in a given area. Whether a firm's industry is facing a redundancy or shortage of capacity has a major impact on whether the firm will expand or contract in a given local area. To depict this situation, the variable, FACI, is added to the model; it is a dummy variable which equals one if the company's current facilities are not adequate for anticipated future operations and zero otherwise. Its impact is predicted to be positive; inadequate facilities usually mean growing demand.

Conditions internal to the firm could impact its decision to expand or contract employment in Richland County. Three variables are used to depict the nature of the firm production function. Very small plants or firms can be more mobile than the larger establishments. To represent this very small size, we add a dummy variable, U15, equaling one for plants with fewer than fifteen employees and zero, otherwise. The impact of this variable is predicted to be negative.

Another variable representing peculiarities of individual firms reflects whether the firm locally undertakes research and development. Overall, firms that undertake research are more likely to survive in the dynamic environment of the twenty-first century, but they are not necessarily attached to any particular location such as Richland County. They may, however, be more attached to the localities where they do their research. Therefore, we hypothesize that firms with their research facility in Richland County are more likely to maintain or expand their employment in that area. Hence, the variable, RDRICH, is added; it equals one if the company had an R&D facility located in Richland County and zero otherwise.

A third internal variable relates to the perception of a firm's management. It often determines whether a firm will expand or contract in a given area. Therefore, we add the variable, ATT, reflecting whether the headquarters management of a multi-plant firm has a positive attitude toward the Richland County. ATT equals one if the attitude among executives at corporate headquarters toward Richland County as a place to do business differs from local management and zero otherwise.

Last, we include a set of variables that depict labor market conditions in Richland County as perceived by the firm. Specifically, they reflect the management's feelings toward the availability, quality, and stability of the labor in Richland County. Two variables pertain to the availability of labor in Richland County; WAVH is a dummy variable equaling one if the firm rates the availability of workers in this area at four or five on a five-point rating scale (indicating high availability) and zero otherwise. WAVL is a dummy variable equaling one if the firm rates the availability of workers in this area at one (indicating low availability) and zero otherwise.

Two other variables reflect the firm perception of the quality of the workforce. One is WQH which is dummy variable equaling one if the firm rates the quality of workforce in Richland County at four or five (indicating high quality) and zero otherwise. The other, WQL, equals one if the firm rates the quality of workforce in this area at one (indicating low quality) and zero otherwise. Finally, two variables reflect the firm perception of the stability of the workforce: WSTH, which equals one if the firm rates the stability of the workforce: at four or five (indicating high stability) and zero otherwise; and WSTL which equals one

if the firm rates the stability of the workforce in this area at one (indicating low stability) and zero otherwise.

Table 2 displays the descriptive statistics (mean, standard deviation, minimum, and maximum) of the dependent and independence variables. Now we describe the results.

## V. THE RESULTS

As stated above, theory can support either the inclusion in or exclusion from the model of any of the above variables. Our first problem, however, is determining the sample. The objectives of most economic development practitioners are to attract and keep firms that contribute to the area economic base, the economic base being defined as the sectors or firms that sell goods and services outside of the area. These firms contribute to the flow of income, products, and resources into a locality. Consequently, emphasis is often placed on the exporting firms, and we set up a sample of firms that export product out of Richland County by deleting from the sample firms with only local markets. We arrive at a sample of 66 firms, when account is taken of firms without the necessary data. To examine more firms, including those with local markets, we also analyze a larger sample of all the 79 firms for which the needed data are available. In that way, we can reach some conclusions about firms serving the immediate locality.

Before proceeding, we need to examine three estimation problems inherent in the model: sample selection, heteroskedasticity, and specification analysis. First, our model could have a sample selection problem. For twelve of the firms in our sample either there are no employment data for 2007, implying that the firm had gone out of business in Richland County or that the data are just not available. (Additionally, there are firms which have started operations between 2002 and 2007; since we do not have data on their characteristics in 2002, they cannot be included in the sample.) For two of the twelve firms with no 2007 data on employment, there is definite information that they either went out of business or left Richland County; therefore, they are included in the model sample. For the other sample firms with no 2007 employment, it cannot be safely assumed that this lack of employment data is a random event. Therefore, we develop a sample selection model that predicts whether the firm had or did not have non-zero employment figures in 2007. Since any of the variables in our main model could have influenced the inclusion of the firm in the sample, they should initially be included in the selection equation. In addition, we include one other variable, LMCAP, a dummy variable for firms in industries with low capital requirements and/or very mobile capital. To estimate this model, the probit method is used twice: once for the whole sample and once for the firms that did not participate in local markets. From the estimation of these selection equations, inverse Mill's ratios are computed. They are added to our models to account for the sample selection problems (Greene, 2000, p. 926–37, and Wooldridge, 2009, p. 606–13). If the coefficient of the Mill's Ratio passes the variable selection criterion (AIC and Mallow, discussed below), we keep it in the model assuming that sample selection does affect estimation, and if it does not pass the variable selection criteria, we drop the variable and assume the sample selection process does not affect the estimates.

Heteroskedasticity is the problem of the residuals not being randomly distributed in different parts of the sample. It may lead to biases in the covariance matrix on which the t and F tests are based. Often, the size of a residual is correlated with the dependent variable and/or one or more of the independent variables. While most of the independent variables are dichotomous and the dependent variable,  $(S_{t+1} / S_t)$ , does not vary that much, the variables  $S_t$  and NAICSE have a considerable variation.  $S_t$  has a range spanning from 6 to 2524, and NAICSE's range spans from 10 to 3183. Breusch–Pagan tests for residual variation indicate that for all the models and specifications the hypothesis of heteroskedasticity cannot be rejected. Even with heteroskedasticity, ordinary least squares (OLS) gives unbiased and consistent parameter estimates, but the covariance matrix and test statistics are biased in uncertain ways. Therefore, making statistical tests based on OLS results could be misleading.

No theory, however, points to exactly how the residual should be modeled. If one has a reasonable idea of the nature of residual variation, then, Generalized Least Squares (GLS) can be applied, but we do not. To deal with the problem, we use a method that combines the advantage of OLS with those of GLS. We start by using the OLS method to estimate the parameters, but we then use the White method to compute what is called in the literature a heteroskedasticity robust covariance matrix. It has been shown that the inferences from this matrix are not vulnerable to differences in the exact nature of the heteroskedasticity. (See Greene, 2000, p. 506, 514, and 522, and Wooldridge, 2009, p. 270.) Thus, we first estimate the OLS parameters for the models, and then we use the heteroskedasticity robust covariance to derive our statistical tests.

The last econometric problem with this project is finding which of the above-discussed variables actually impact the  $S_{t+1}/S_t$  growth equation. We use a top-down specification search that starts with the most inclusive model and eliminates variables that do not measure up to certain criteria. Several of these criteria can be used to determine which variables should be included in the model. They are all based on certain assumptions about the nature of the model. Our problem is that we are not certain which these assumptions are true. The following procedures are considered: the Theil, the Mallow, the Amemiya, the Hocking, and the Akaike (AIC) (See Maddala, 1992, p. 496–504.). The Theil test aims to maximize the R square of the equation, while the Mallow, Amemiya, and Hocking criteria are based on maximizing the likelihood of making correct predictions given certain assumptions. Akaike's Information Criterion (AIC) is based on a combination of the equation sum of the squares and the number of observations and the likelihood function of the model; it is often used in nonlinear estimation techniques. In fact, we use the AIC method to determine the specification of the Probit estimations used for the sample selection.

Given the particular sample size and the initial number of parameters, we use two search techniques. The first and most stringent method is the Mallow technique, which implies an F value of 2. Given the sample size and the number of variables, this technique tends to be quite close to the Amemiya and Hocking methods, which also imply F values of around 2. The other looser criterion used is Akaike's Information Criterion (AIC), which has an implied exclusion F value of about 0.60. This criterion is quite loose, but it may counteract the omitted variable problem.

We now ascertain what variables will survive under these two criteria and suggest which factors should be examined most closely by policymakers. These variables are likely to have an influence on firm decisions to expand in Richland County. Last, to further check our analysis, we run tests to see which of the final models, that from the AIC technique, or that from the Mallow method, best describes the data generating process. To do this, F tests are used since it turns out that the Mallow models are encompassed by the AIC models.

Tables 3A and 3B display the results of estimating the growth model with  $S_{t+1}/S_t$  as the dependent variable. In these tables, two specifications of the equation are shown for our two samples the Total Sample (Table 3A) and the Nonlocal Sample (Table 3B). The results for the Akaike Information Criterion (AIC) are displayed in column 2; and the results for the Mallow criterion (which is very close to the Hocking and Amemiya tests) appear in column 3.

In examining the statistics for the whole equation, we find that the models only explain a modest portion for the variation in firm employment growth, between 8 and 23 percent as indicated by the adjusted  $R^2$ . For three of the models, F-tests indicate that the null hypothesis of random results can be rejected at a high level of statistical significance (the probability values being between 0.0320 and 0.005). This implies that the chances of these results being random are between 0.1 percent and 3.2 percent. From other F-tests, we can infer that the more inclusive AIC models add little explanatory power to the Mallow models; the test values for the difference between the models are not statistically significant even at the 10 percent level. Nevertheless, the t values for the individual variables in the AIC specifications indicate that the phenomena they represent may influence firm growth. Furthermore, while growth rates models tend to

have low  $R^2$ s, the implication is merely that there are other important variables out there, and it does not invalidate the results we find unless there are problems with omitted variable bias.

Now we examine these independent variables. They are classified under each of six theoretical categories; size, age, economies of agglomeration, demand conditions, the internal firm situation, and labor markets. Size as represented by  $S_t$  has a very weak negative relationship to growth. It is not statistically significant in the two full sample models; in fact it is not even included in the Mallow model. When the local firms are excluded, however,  $S_t$  exhibits a negative effect and is significant at the 10 percent level on a two-tail test for the less inclusive Mallow model. Thus there is evidence that size in itself has a negative effect on the growth rates of firms focusing on markets outside the local area, but it is weak.

Age, as represented by MANCH and IMANCH, apparently has no effect on the growth rates of firms in the Richland County. Perhaps we do not have a variable that truly represents age.

For economies of agglomeration, there is weak evidence in the nonlocal sample. Two variables are used to depict this effect, NAICSE and N332. The former is not statistically significant for the full sample, but it is significant on a one-tail test for the AIC nonlocal model at the 5 percent level and for the Mallow nonlocal model at the 10 percent level. These results indicate that agglomeration may have some impact on the size of firms in Richland County. The results for N332, the dummy variable for whether the firm is in the metalworking industry, are contrary to our original hypothesis. The coefficients were always negative indicating that other-things-equal, firms in this sector grew less than other firms. For the full sample Mallow model, the variable is excluded because of its low t value. While NAICSE shows some promise, our results indicate that N332 apparently does not strongly influence firm growth in Richland County. Consequently, being in an industry that is concentrated in the Mansfield area may encourage firm growth, but being in NAICSE 332, metalworking does not.

Growing general demand has the expected influence on firm growth in our sample. DVS measures the growth of the industry in which the sample firm operates. For all four models, the AIC full sample, the Mallow full sample, the AIC nonlocal sample, and the Mallow nonlocal sample, it has the expected sign, and it is significant at the 5 percent level. None of the other variables depicting demand were statistically significant in the predicted direction. For one variable, however, there is an interesting result. The coefficient for INTERN, the dummy variable for whether the firm participated in an international market, is positive for all four models. For the nonlocal Mallow model and both the full sample models, it is statistically significant on a two-tail at the 10 percent level. This suggests a rather unorthodox hypothesis that firms in international competition grow faster than other firms even in Rust Belt areas such as Richland County.

Of the three variables representing internal firm conditions, U15, the dummy indicating whether the firm had fifteen or fewer employees, has a counterintuitive sign. It is positive in all four models being statistically significant in both full sample models but not in the nonlocal samples. Apparently, very small firms in our sample grow faster than others. Why is not clear.

ATT is the dummy variable indicating a difference between the firm headquarters and local management on whether Richland County was a good place to do business. It is negative and statistically significant for all four models (with a probability value of less than one percent for three of the models). Thus, the attitude of the firms toward the locality plays an important role in the decision to grow in a particular place like Richland County.

For the other firm variables, the coefficients are usually statistically insignificant and often they have the wrong sign. The other variable depicting the internal firm situation is RDRICH, a dummy variable indicating whether the company had R&D facility located in Richland Country. It is not statistically significant in any of our four models.

Six variables represent conditions in the labor market, WAVH, WAVL, WQH, WQL, WSTH, and WSTL. Of these, two, WQL, and WSTL are statistically significant in expected direction for the full

sample model but not for the nonlocal sample models. WSTH has a negative sign in the full model for which we cannot account.

Some of the results here not very strong, but some conclusion can be drawn, and there is guidance for further research. This is discussed in the last section.

## VI. CONCLUSIONS

There are four variables that seem to impact strongly firm growth rates in Richland County. Generally size has a negative relationship, and the impact of U15 indicates that smaller firms seem to grow faster in the Richland County area. There is some evidence that economies of agglomeration positively impact firm growth in Richland County. Being in an industry that is concentrated in this region can still increase firm growth. National industry growth rates, as represented by DVS, positively impact Richland County firm growth rates. Strangely, being in an industry in international competition has a positive effect on firm growth. Another major impact is that of the attitude of the management of the firm (ATT). If the management from headquarters does not like the Richland County area, then the firm or establishment does not grow there.

Some conclusions and suggestions for future research can be gleaned from these results. First, the NAICSE results show weak evidence for economies of agglomeration. Second, there seems to be a negative relationship between size and establishment or firm growth. Size, represented by  $S_t$ , is usually negative, and second, the U15 coefficients indicate that being very small leads to greater growth. This is consistent with other studies (Evans, 1986 and 1987), but further research is needed to draw any strong conclusions.

The hypotheses that some of the other variables led to growth cannot be rejected. Among those where the evidence was unambiguous were DVS, ATT, WQL, and WSTL. The DVS results first indicate that firms in growing markets increase employment in Richland County. Second, one of the strongest results is that for ATT, the attitude of the firm management toward Richland County. Firms with negative attitudes toward this locality will not grow there. Third, the results show that firms who perceive the county as having low labor quality and stability grow less.

The areas that call for more research are economies of agglomeration and the impact of international markets. While on agglomeration our results are suggestive, they are not conclusive. More research can clarify the interconnections between agglomeration and firm growth. Our results indicate that firms in international markets grow faster than others. This goes against our original hypothesis. Therefore, another sample should be used to test this finding. The results indicate that firms competing with companies across the world may be the one that will grow the most. This might have some interesting policy consequences.

Some might question the thrust of this paper which attempts to ascertain the characteristics that lead to firms locating in different areas. They might argue that learning firm traits could lead to policies that cater to some companies at the expense of the general public. Overall, such policies might lead all localities to favor given firms at the expense of the general welfare. This sequence ties in with the “race to the bottom” theory.

Nevertheless, it seems prudent for economic development authorities to know and understand the firms in their localities. Often there are reasonable trade-offs between helping particular firms and not others. Knowing the characteristics of firms inclined to locate in given areas would give local governments a chance to implement policies that would both accommodate these firms and enhance the general welfare. Just as public schools should know their students and police departments should know their neighborhoods economic development practitioners should know the firms in their localities. Hopefully, the model in this paper makes a contribution to this knowledge.

**TABLE 1. THE DEPENDENT AND INDEPENDENT VARIABLES  
FOR THE PLANT AND EMPLOYMENT EXPANSION MODELS IN RICHLAND COUNTY, OHIO**

**The Dependent and Firm Growth Variables:**

$S_t$ :	The number of employees for the sample firm in 2003.
$S_{t+1}$ :	The number of employees for the sample firm in 2007.
$S_{t+1}/S_t$ :	The ratio of firm employment in 2007 to that in 2003 which shows how the firms had grown in the four year period.
MANCH:	A dummy variable equaling 1 if the company's ownership or top management has changed in the 18 months before the survey or if a change was anticipated; and 0 otherwise.
IMANCH; MANCH* $S_t$ :	The interaction term.

**The  $X_t$  Vector:**

**Economies of Agglomeration:**

NAICSE:	The 2003 number of employees in the sample firm's industry as represented by its North American Industry Classification System (NAICS) group.
N332:	A dummy variable equaling 1 if the sample firm's Industry NAICS code is 332; and 0 otherwise.

**Demand Variables:**

DVS:	The ratio of the value of shipments in the 2007 Economic Census for the sample firm's national NAICS to that in the 2002 Economic Census adjusted for inflation by the GDP Deflator.
UPCYCLE:	A dummy variable equaling 1 if the company's primary product/service is in the emerging or growing phase of its life cycle; and 0 otherwise.
DOWNCYCLE:	A dummy variable equaling 1 if the company's primary product/service is in the declining phase of its life cycle; and 0 otherwise.
MSUP:	A dummy variable equaling 1 if the market share of the company's key product(s) is (are) increasing; and 0 otherwise.
NNEW:	A dummy variable equaling 1 if the firm anticipates new products/services in the next two years; and 0 otherwise.
LOCAL:	A dummy variable equaling 1 if the company's primary market is local; and 0 otherwise.
REGION:	A dummy variable equaling 1 if the company's primary market is regional; and 0 otherwise.
FACI:	A dummy variable equaling 1 if the company's current facilities are not adequate for anticipated future operations; and 0 otherwise.
EXPORT:	A dummy variable equaling 1 if firm export sales as a percentage of total sales are increasing or stable; and 0 otherwise.
INTERN:	A dummy variable equaling 1 if the percentage of U.S. market of the sample firm's primary product controlled by international competitors is greater than 20 percent, and 0, otherwise.

**TABLE 1. CONTINUED**

**Internal Firm Conditions:**

U15:	A dummy equaling 1 for the firm with 15 or less employees in 2003 and 0, otherwise.
RDRICH:	A dummy variable equaling 1 if the company had R&D facility located in Richland Country; and 0 otherwise.
ATT:	A dummy variable equaling 1 if the attitude among executives at corporate headquarters toward Richland County as a place to do business differs from local management; and 0 otherwise.

**Input (Labor) Market Conditions:**

WAVH:	A dummy variable equaling 1 if the firm rates the availability of workers in this area at 4 or 5 (indicating high availability); and 0 otherwise.
WAVL:	A dummy variable equaling 1 if the firm rates the availability of workers in this area at 1 (indicating low availability); and 0 otherwise.
WQH:	A dummy variable equaling 1 if the firm rates the quality of workforce in this area at 4 or 5 (indicating high quality); and 0 otherwise.
WQL:	A dummy variable equaling 1 if the firm rates the quality of workforce in this area at 1 (indicating low quality); and 0 otherwise.
WSTH:	A dummy variable equaling 1 if the firm rates the stability of the workforce in this area at 4 or 5 (indicating high stability); and 0 otherwise.
WSTL:	A dummy variable equaling 1 if the firm rates the stability of the workforce in this area: at 1 (indicating low stability); and 0 otherwise.

**Sample Selection Mill's Ratio Equation Variables:**

LMCAP:	A dummy variable for firms in industries with either low capital equipment and very mobile capita; and 0 otherwise.
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**TABLE 2. DESCRIPTIVE STATISTICS FOR THE DEPENDENT AND INDEPENDENT VARIABLES FOR THE PLANT AND EMPLOYMENT EXPANSION MODELS IN RICHLAND COUNTY, OHIO**

<u>Variable</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Observations*</u>
S <sub>t</sub>	209.49	447.57	6	2524	79
S <sub>t+1</sub>	185.53	413.34	0	2700	79
S <sub>t+1</sub> / S <sub>t</sub>	0.97	0.48	0	2.75	79
MANCH	0.13	0.33	0	1	79
IMANCH	14.61	74.18	0	640	79
NAICSE	1005.34	919.80	15	3183	79
NAIC332	0.25	0.44	0	1	79
DVS	1.16	0.15	0.94	1.62	79
UPCYCLE	0.53	0.50	0	1	79
DOWNCYCLE	0.05	0.22	0	1	79
NNEWP	0.75	0.44	0	1	79
MSUP	0.49	0.50	0	1	79
LOCAL	0.16	0.37	0	1	79
REGION	0.43	0.50	0	1	79
FACI	0.22	0.41	0	1	79
EXPORT	0.35	0.48	0	1	79
INTERN	0.22	0.41	0	1	79
U15	0.15	0.36	0	1	79
RDRICH	0.42	0.50	0	1	79
ATT	0.05	0.22	0	1	79
WAV <sub>H</sub>	0.44	0.50	0	1	79
WAV <sub>L</sub>	0.08	0.27	0	1	79
WQ <sub>H</sub>	0.43	0.50	0	1	79
WQ <sub>L</sub>	0.04	0.19	0	1	79
WST <sub>H</sub>	0.62	0.49	0	1	79
WST <sub>L</sub>	0.01	0.11	0	1	79
LMCAP	0.27	0.45	0	1	91

\*The sample drawn here consists of only the firms that have complete data. For all the variables except LMCAP, which appears only in the sample selection Probit model, this sample coincides with the Full Sample used for econometric estimation.

Source: Richland Development Corporation (2003), U.S. Census Bureau (2009), U. S. Bureau of Economic Analysis (2009), Manta Media Inc. (2009), and Richland Development Corporation (2009).

**TABLE 3A. THE RESULTS FOR THE ESTIMATION OF THE REGRESSION MODEL  
FIRM GROWTH ( $S_{T+1}/S_T$ ) BETWEEN 2003 AND 2007  
AS SELECTED BY THE AIC AND MALLOW CRITERIA FOR THE FULL SAMPLE  
(NUMBER OF OBSERVATIONS =79)**

<u>Variable Name</u>	<u>AIC Criterion Coefficients</u>	<u>Mallow Criterion Coefficients</u>
Constant	-0.03404	0.18935
$S_t$	-0.00012 (-1.314)	
NAICSE	0.00012 (1.250)	
N332	-0.20657 (-0.952)	
DVS	0.73018 (1.673)	0.72596 (1.742)
NNEWP	0.13214 (1.118)	
LOCAL	0.21380 (1.900)	
REGION	0.12086 (1.183)	
INTERN	0.20253 (1.668)	0.19126 (1.695)
U15	0.37454 (3.791)	0.45639 (4.169)
ATT	-0.44335 (-3.390)	-0.50179 (-3.352)
WQ <sub>L</sub>	-0.34866 (-1.954)	-0.34930 (-1.873)
WST <sub>H</sub>	-0.20565 (-1.946)	-0.20181 (-1.855)
WST <sub>L</sub>	-0.58377 (-3.151)	-0.61512 (-4.241)
Adjusted R <sup>2</sup>	0.1989	0.2291
Model F Test	2.49	4.31
Prob. Value	(0.008)	(0.0005)

The Mill's Ratio does not pass the variable selection criterion in either of these equations.

The numbers in parentheses under the coefficients are their t values.

**TABLE 3B. THE RESULTS FOR THE ESTIMATION OF THE REGRESSION MODEL  
FIRM GROWTH ( $S_{T+1}/S_T$ ) BETWEEN 2003 AND 2007  
AS SELECTED BY THE AIC AND MALLOW CRITERIA FOR THE NONLOCAL SAMPLE  
(NUMBER OF OBSERVATIONS=66)**

<u>Variable Name</u>	<u>AIC Criterion Coefficients</u>	<u>Mallow Criterion Coefficients</u>
Constant	-0.17700	-0.22379
$S_t$	-0.00018 (-1.658)	-0.00018 (-1.712)
NAICSE	0.00018 (1.690)	0.00015 (1.621)
N332	-0.34405 (-1.658)	-0.29257 (-1.368)
DVS	0.81919 (1.766)	0.91638 (1.863)
UCYCLE	0.09953 (0.958)	
REGION	0.09465 (0.916)	
INTERN	0.18263 (1.407)	0.23925 (1.701)
U15	0.16670 (1.415)	0.19543 (1.534)
ATT	-0.37882 (-2.319)	-0.49233 (-4.061)
WAV <sub>H</sub>	0.19877 (1.608)	
WAV <sub>L</sub>	0.19477 (1.014)	
WQ <sub>H</sub>	-0.08977 (-0.874)	
WST <sub>H</sub>	-0.11213 (-0.822)	
Mill's Ratio	-0.22950 (-1.334)	
Adjusted R <sup>2</sup>	0.0880	0.1305
F Test for the Model Prob. Value	1.45 (0.1659)	2.39 (0.0320)

The Mill's Ratio does not pass the variable selection criterion in the Mallow equation.

The numbers in parentheses under the coefficients are their t values.

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#### ENDNOTES

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**2012 OAEPS YOUNG SCHOLAR AWARD IN POLITICAL SCIENCE**

**TURN AND BURN:  
LOSS DYNAMICS AND CIVILIAN TARGETING IN THE ANGOLAN WAR<sup>1</sup>**

**JEN ZIEMKE**

JOHN CARROLL UNIVERSITY, THE HARVARD HUMANITARIAN INITIATIVE,  
AND THE INTERNATIONAL NETWORK OF CRISIS MAPPERS

**ABSTRACT**

Under what conditions do combatants make the choice to deliberately target civilians? What explains stark sub-national variation in levels of civilian targeting in civil war? My research shows that belligerents abuse civilians most often when they are losing. As battlefield losses accrue, the likelihood that losing armies will turn on civilians dramatically increases. This hypothesis is tested using new, micro-level data on nearly 10,000 battle and massacre events from the forty-one-year long Angolan civil war, obtained from an exhaustive exhumation of archival material. Empirical evidence reveals that combatants on both sides of this conflict were more likely to target civilians in the immediate aftermath of territorial and battlefield losses than at any other time. Observed patterns in civilian targeting are therefore endogenous to combatants' fortunes on the battlefield. More broadly, the recent rapid growth and accessibility of large volumes of georeferenced conflict event data helps data scientists refine their questions, tools, and theories in order to understand better the complexities of conflict dynamics.

UNITA has increased its terrorist attacks on innocent civilians. It has attacked schools, buses and trains. It has shot at people fleeing to escape from the flames of burning explosion. It has shot at World Food Programme planes carrying not weapons but desperately needed food and humanitarian supplies. (UNSC, 2001).

**FIGURE 1. A WALL MURAL OUTSIDE A MILITARY HOSPITAL IN LUANDA<sup>2</sup>**



### **I. A PUZZLE**

What motivates combatants in civil war to begin deliberately killing civilians when they did not before? Why engage in what appears to be a counterproductive strategy? After all, military campaigns crucially rely on civilian support for their success. Civilians provide combatants with needed quarters, food, shelter, intelligence, portorage, and supplies of future recruits. Civilian targeting also violates a number of domestic and international norms about acceptable conduct in war.

The empirical record reveals remarkably high sub-national variation in the levels of deliberate civilian targeting in civil war. Sometimes, combatants target civilians, whereas in another times and places, civilians are not targeted. Even in cases where civilian targeting is rife, it is never ubiquitous. Indeed, throughout history, combatants have often shown remarkable restraint with respect to the treatment of civilians in war, despite extreme stresses faced on the battlefield. Typically, both restraint on the one hand and deliberate civilian targeting on the other coexist together, inside the space of the same war. This paper attempts to explore the switch in strategy from restraint to deliberate civilian targeting by examining the conditions under which combatants elect to target civilians in war.

The primary finding gleaned from an event-based analysis of nearly 10,000 battles and massacres in the Angolan civil war is that both government and rebel belligerents are more likely to commit abuses against civilians in civil war when they are losing. Armies retreating from an area after experiencing the loss of territory are more likely to leave decimated civilian populations in their wakes. The best predictors of massacre events in war are other battlefield events. Knowing the micro-level details of such events is essential for understanding these complex processes. Specifically, I have found that massacres and the deliberate targeting of civilians are a function of battlefield losses. As territorial losses accrue as a result of losses on the battlefield, retreating armies increasingly turn toward targeting civilian populations.

In order to begin to explore the dynamic nature of the battlespace in Angola, I coded the *who*, *when*, *where*, and *how* of individual events in this long war, gleaned from thousands of archival and print materials. This methodology draws from a fruitful new trend in conflict research, consistent with the “micro turn” in disaggregated and dynamic studies of conflict and violence and other work on the geography of war as well, as in the new field of “Crisis Mapping” (e.g. Ball, 2004; Balcells 2010; Buhaug & Gates, 2002; Eck & Hultman, 2007; Gulden 2002; Hegre & Raleigh, 2007; Humphreys & Weinstein,

Steinberg et. al, 2006; Varshney, 2003; Ziemke 2012b). This research also intersects with scholars treating the complex outcomes of conflict dynamics as something endogenous to prior wartime events (e.g. Hultman, 2007; Kocher, Pepinsky & Kalyvas, 2011; Wood, 2006; Ziemke 2012). We also owe a debt to the rich literature on the determinants, intensity and duration of civil conflict, mass killings, and genocide more generally (e.g. Humphreys & Weinstein, 2006; Lacina & Gleditsch 2005; Valentino, Huth, & Blach-Lindsay, 2004).

This paper first offers a basic historical background to the Angolan war, providing the reader with some context with which to understand the empirical analysis. I then discuss how the data was collected and coded, delineate two testable hypotheses, and treat each of them in turn. Finally, I spend some time examining more closely Hypothesis II, the loss hypothesis, as it is the core finding of this research project. I conclude by proposing a mechanism likely linking losses with deliberate civilian targeting.

## **II. ANGOLA: A BRIEF BACKGROUND**

The Angolan war began as a war of independence from Portuguese colonial rule in 1961. When the Portuguese hurriedly exited the country in 1975, they left in their wake an emergent power struggle among three competing nationalist movements, the MPLA, the FNLA, and UNITA. A full-blown civil war ensued after one of the groups, the MPLA, seized the levers of power and came to control all governmental institutions. The MPLA government accepted help from 50,000 Cuban troops and Soviet equipment, intelligence, and advisors, while the main rebel group, UNITA, secured funding from the United States and equipment and troops from apartheid South Africa. This heavily internationalized conflict thus became enmeshed in Cold War politics during the 1970s and 1980s. This period of the war can also be understood in terms of regional and global dynamics as a battle between a frontline nationalist state and the apartheid regime in South Africa, with UNITA acting as its ally. Soviet tanks fought heavy, pitched conventional battles during this period. South African troops on many occasions invaded Angola and once nearly advanced to Luanda, the capital and heart and soul of the MPLA regime.

Despite the importance of an international intervention that significantly shaped the trajectory of this war, the war did not end with the demise of the apartheid regime or the end of the Cold War. The core struggle for power between Jonas Savimbi's UNITA and the MPLA government continued for another decade, until 2002. In fact, the bloodiest period of Angola's war came after 1992. In that year, the UN attempted to settle the conflict peaceably by administering an election, but that effort ended in disaster. When the announcements rolled in that the rebel UNITA had narrowly lost the election, Savimbi's troops went on a rampage and the war escalated to levels of intensity not seen before. The conflict devolved to a largely irregular war, as rebels laid siege to major cities, landmines decimated civilian populations, and the government trapped and starved its people. The war ended, not by political settlement, but by the military defeat of the rebel UNITA army, whose decimated troops were pushed eastward and destroyed. The assassination of Jonas Savimbi in 2002 marked the conflict's end. The effects of several decades of violence, the persistence of landmines, corruption, poverty, and the scourge of uneven development remain formidable challenges.

President Jose Eduardo dos Santos remains in power as of the date of this writing, a position he has held since the death of the MPLA's first president in 1979. Angola has enjoyed significant economic growth since the end of the war; indeed, the country is one of the fastest growing nations in Africa. However, the port city of Luanda suffers from the strain of a massive construction boom, driven largely by revenues from Angola's offshore oil wealth. Owing to the massive distortions of an oil-based rentier state, the cost of living in Angola is absurdly expensive. The abuses of power and ongoing human rights violations continue to concern many in the international community.

But why select the Angolan war as our case for a detailed, event-based analysis? First, relatively little has been written about this war compared with other cases. Despite the vast number of primary reports available about the conflict in the Portuguese-language press, data about the war remain scarce, because it

would be difficult for scholars to obtain many of these documents. The war occurred in a moment very different from the one we have now: a world where real-time updates, digital news feeds, and torrents of twitter streams crush us under the weight of “big datasets”. Primary data from this war suffers from the opposite problem: one would need thousands of hours behind photocopy machines in dusty rooms in archival areas of Lisbon, Portugal, to access the data. Most articles are not electronically accessible, and photocopies are expensive and difficult to obtain. Most original sources come from unorganized basement files or large dusty volumes in an old neighborhood in Lisbon. This study is therefore an attempt to help improve our knowledge about what took place during the Angolan war. A vast, comprehensive dataset of 9,216 unique battle and massacre events is its primary contribution, available to others in a variety of formats upon request. The data follows the coding protocol pioneered by Armed Conflict Location Events Dataset (ACLED) associated with the Peace Research Institute, Center for Study of Civil War, in Oslo, Norway (Raleigh & Hegre, 2005; Raleigh et. al, 2006).

In order to conduct hypothesis tests on event data from a civil war, it is best to select a case with a large number of events, spanning a number of years. The Angolan war represents one of the longest and most active civil wars of the past 100 years. Angola ranks among the top twenty most conflict-prone nations in the world. Angola’s conflict is also the longest running instance of any politicide, genocide or mass killing appearing on the State Failure Task force list, with estimated casualties from conflict over the period ranging from 500,000 to 1 million deaths. And it is the only instance of mass killing between 1955 and 2001 for which both government and rebel side actors perpetrated these crimes, affording one the unique opportunity to examine the qualitative and quantitative differences between state-directed genocides and rebel-side atrocities. Rather than make assumptions about whether states or insurgents are more likely to engage in civilian targeting, one can investigate the issue empirically.

### III. EVIDENCE

In order to create this massive dataset, I worked with my assistant, Linda Nilsson Ungh, to examine entire bookshelves containing several volumes worth of large, bound books that contained daily newspapers from that period. We found that the Portuguese press and wire service ran the most detailed news stories about the conflict throughout the duration of the period. Portugal’s interest in and press coverage of Angola remains strong due to their linked histories and the demand from Angolans in the diaspora to keep up with the latest from Luanda. These Portuguese-language newspapers and other archival materials were retrieved from a number of locations in Lisbon. Any articles found to contain information on the Angolan war were photocopied. These photocopies were then assembled in chronological order into large binders, and examined for relevant battle and massacre events, which were then circled in ink and later translated into English. Details regarding the *who*, *what*, *where*, *why*, and *how* of specific battle and massacre events were translated into English for ease of coding, and that document numbers over 1,000 single-spaced pages. As such, it represents a short historiography of all known events in the Angolan war. See Appendix B for a list of the sources used. Translating and coding the articles into geo-referenced battle and massacre events took me two long years.

Using these resources, I then assembled, translated, and coded a new dataset consistent with the Armed Conflict Location Events Data (ACLED) framework. I coded battles, massacres, and territorial transfers according to the identity of the perpetrators and victims, the number of civilians and combatants killed, and the nature of the violent event. Each event was then geo-temporally referenced so this information could be visualized on a map (Ziemke, 2008). At nearly 10,000 individual events, this hand-coded dataset and corresponding reference library represent the best single source of information on battles and massacres of the Angolan war currently available.

Events constitute the fundamental unit of analysis in this study. Each event records the: *who*, *what*, *where*, *when*, *how*, and the *source*. *Fatality estimates* and the *identity* of both perpetrator(s) and victim(s), if known, were also recorded. Each event was also assigned one of the following *event types*:

- Conventional battle event
- Transfer of territory to rebel actor (State-side loss)
- Transfer of territory to government forces (Rebel-side loss)
- Establishment of rebel base or headquarters
- Troop movement or other activity
- Territorial transfer to rebels at unknown date
- State-side massacre of civilians
- Rebel-side massacre of civilians

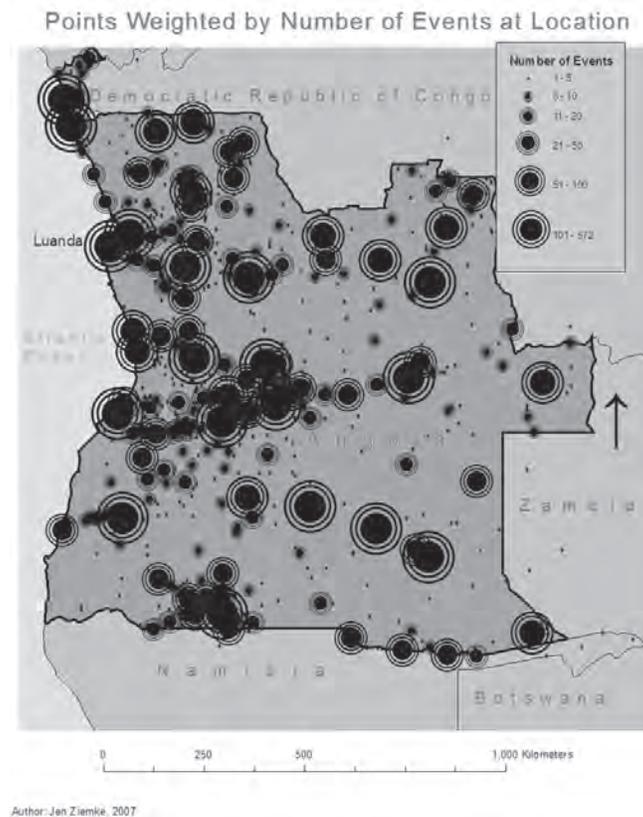
Please see Appendix A for formalized definitions of each event and additional summary statistics.

What do we find from this collection of battle and massacre events from the Angolan civil war? Basic descriptive statistics offer a quick overview of the dataset. Note the discrepancy between battle deaths reported in Table 1 [166,784] and the 500,000 to 1 million deaths figure cited earlier in this paper as the State Failure Task Force estimate of the total number of casualties for the conflict. The reason why the battle death counts from this dataset are so much lower than the State Failure Task Force estimate of 500,000 to 1 million deaths can be attributed in part to the underreporting of casualty estimates in many individual reports. Many journalists reporting on the Angolan war describe bloody battles but leave no indication of casualty estimates. Missing data, therefore, is one reason for the discrepancy between these two figures. It is important to note that this dataset does not include deaths due to landmines, forced starvation, or famine, even though such indirect effects of war on human populations are massive.

<b>TABLE 1. BASIC DESCRIPTIVE STATISTICS, 1961–2002</b>		
	Battle Deaths	Civilian Deaths
Total	166,784	56,359
Min per event	1	0
Max per event	5400	2,000
Mean per event	18.1	6.11
Standard Deviation	107.27	38

As large as this dataset may be (at nearly 10,000 unique events), it still cannot possibly capture every event in this tragic war. However, even a casual examination of the Figure 2 suggests that the data do not suffer from urban bias and that the levels of violence were widespread throughout the country.

**FIGURE 2: THE STRIKING NUMBER OF INDIVIDUAL BATTLE OR MASSACRE EVENTS AT EACH LOCATION IN ANGOLA**



#### IV. HYPOTHESIS TESTING

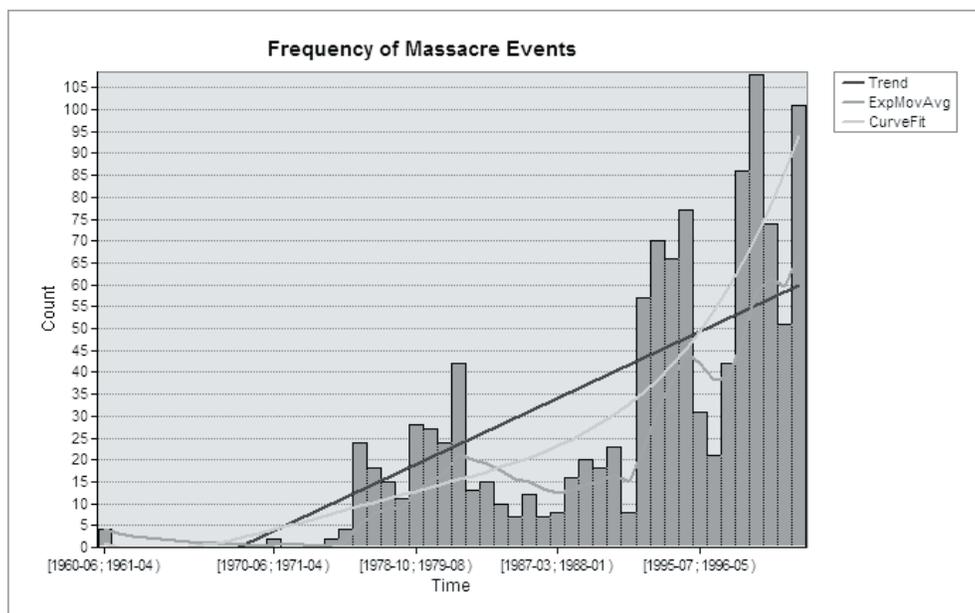
An examination of Figure 3 reveals some of the temporal variation in levels of violence against civilians. What hypotheses might help explain these trends?

A cursory examination of Figure 3 reveals an apparent trend toward increased violence and massacres against civilian populations in the Angolan war over time. This finding suggests a formal hypothesis:

*Hypothesis I: Violent habituation. Ceteris paribus, the level of deliberate civilian targeting will increase as the war progresses over time.*

To test Hypothesis I, I created a count variable, *Time*, representing the number of months elapsed since January 1960. Formal evidence in support of Hypothesis I is presented later in Tables II and III. The results from the model estimation reveal a positive and statistically significant coefficient on *Time*, robust to changes in model specification. One key feature of this war, then, is a general trend toward escalating violence against civilians over time. This finding corroborates hypotheses suggested by other scholars. For example, Stephen Ellis claims that in the Liberian war, combatants became habituated to greater levels of brutality over time (1999). As wars wear on, belligerents become more experienced in killing and more practiced in the use of violence.

**FIGURE 3: FREQUENCY OF MASSACRE EVENTS, 1960–2002**



However, certainly not all of the variation in levels of violence in the Angolan war can be explained by the Hypothesis I alone. What explains the other, micro-fluctuations in the time series above? While Hypothesis I is both substantively and statistically significant, it is not sufficient to explain these fluctuating patterns.

It is difficult to imagine how the usual variables used to explain civil war onset, duration, or termination would help to explain the substantial levels of sub-national, spatio-temporal variation in levels of violence in war. For instance, it is difficult to imagine how a variable like *regime type*, or *colonial history*, or even the presence or absence of certain lootable natural resources would help explain drastic changes in space and time in the levels of deliberate civilian targeting. That is because when it comes to variables like regime type, colonial history, ethnic identity, or the presence of natural resources, at the sub-national level these variables simply don't vary enough. For example, how could these variables explain a late 1992 spike in the level of civilian targeting in Angola's central plateau, or the atrocities in the spring and fall of 1998? A colonial-history dummy variable does not seem relevant. Micro-level, event-based, disaggregated studies of war call for variables that could help explain this puzzle. Importantly, these variables need to vary in the same way, or exist at the same scale or unit of analysis. Event-based analyses naturally seek to explain their events in terms of other events. Peace talks, ceasefires, seasonal cycles, battlefield maneuvers, and territorial gains and losses are just a few of the plausible variables that might help explain such quick moving, spatio-temporal variation.

Perhaps civilian targeting, then, is at least partly a function of other endogenous battlefield events. Because of insights gained from careful study of conflict dynamics, a promising hypothesis suggests that territorial gains or losses are just the kind of event that might shape the likelihood of civilian targeting and trajectory of the conflict. Hypothesis II formalizes this claim:

*Hypothesis II: Belligerents are more likely to deliberately target civilians after losing battles and territory in the war.*

*Loss events* are defined as a unidirectional change in control over territory. A *loss* occurs when a group which previously held territory withdraws from the area as a result of losses on the battlefield. The loss hypothesis has its foundation in the literature on conflict and civil war violence. In particular, Stathis Kalyvas advances a similar theory emphasizing the importance of *control* (2006). Although Kalyvas argues that levels of civil war violence are driven by levels of *control* over areas by belligerent actors, I

hypothesize that what best describes patterns of civilian abuse is *change* in control, or, more specifically, *loss*. And gains are different from losses. The sheer *level* of control does not matter as much as the *direction of this change*.

Anecdotal evidence suggests that scholars, journalists and affected populations with intimate knowledge about the progression of specific wars often talk about a relationship between violence and battlefield losses. For example, Ron Atkinson, in his detailed and careful work on LRA violence in northern Uganda, opines: “Anyone who knows anything about the LRA should have known that when the rebel group is pushed, let alone attacked, they will retaliate against soft targets that the rebels see as linked to or associated with those who are opposing them.” (2010). Similar assumptions abound about the nature of modern conflicts, but these assertions never have been rigorously tested against available micro-level evidence.

In order to examine the changing fluctuations in levels of violence against civilians over time, I created a dependent variable—*deliberate civilian targeting*—that operated in a number of different ways. *RebelMassacre* and *GovtMassacre* reflect a count of the total number of massacre events committed by each actor in that month. *RebelCasualties* and *GovtCasualties* refer to the estimated total civilian casualties committed by these actors in a month. Appendix B reports summary statistics on the raw variables used in the test of Hypotheses I and II. It is important to note that model results remained remarkably resilient to changes in the way in which the dependent variable was employed, as stated above.

If this hypothesis is correct, territorial losses in the previous period should increase the level of deliberate civilian targeting (number of massacres and amount of civilian deaths) in the next month, in areas proximate to the battlefield loss. There are six regression models in Table 2. The first three models, A–C, consider deliberate massacre events perpetrated by rebel armies, whereas models D–F examine massacre events perpetrated by the government side. For both rebel- and government-side perpetrators, three different dependent variables were meant to capture different conceptualizations of the intensity of violence against civilians. These include:

- a. a count of all massacre *events* in one month.
- b. the total number of civilian *casualties*/month.
- c. a combination of a & b above  $[2a + b]$ .<sup>3</sup>

The author first tested the hypothesis that loss leads to civilian targeting using an error correction model. The Engle-Granger two-step method was selected because parameter estimations using this approach are unbiased and consistent for large samples. The Engle-Granger approach proceeds in two steps. In the first step, one evaluates the relationship between  $y_t$  and  $x_t$  using an Ordinary Least Squares regression approach. In the second step, the lagged value of the model residuals obtained from the first regression model (the correction rate) is applied to the second model. Luke Keele and Suzanna De Boeuf (2004) recommend adopting the Engle-Granger approach when all series are considered stationary. Indeed, all series were confirmed stationary by an Augmented Dickey Fuller test of model residuals.

$$\begin{aligned} \text{Deliberate Civilian Targeting (by side)} = \\ \beta_0 + \beta_1(\text{loss}) + \beta_2(\text{correction rate}) + \beta_3(\text{time}) + \beta_4(\text{CasTot/Event}) + \varepsilon \end{aligned} \quad (1)$$

For insurgent and incumbent perpetrators alike, all of the available evidence supports the hypothesis that losing in one period significantly and substantively increases the likelihood of deliberate civilian targeting in the next. In addition, the odds these results are a product of pure chance are less than 1 percent. And these results are not sensitive to changes in the operationalization of the dependent variable, nor are they restricted to either government or rebel-side actors. It should also be noted that that the positive and statistically significant relationship between *Loss* and *Civilian Targeting* holds whether one is using the two-step error correction method as shown here or a one-step method, and that this result holds for both

rebel- and government-side actors. To offer a clear, substantive interpretation of these results, examine the highlighted parameter estimate in Table 2. This estimate suggests that one would expect the rebel army to kill *nine times* more people in a month when after experiencing a number of battlefield losses than in a month when they did not lose.

Despite the many attractive features of the Error Correction Model, count data are distributed in a way that violates a number of assumptions normally made for model estimation to proceed. In addition, the inflated rate of zeros in the model (months with zero events) further complicates estimation. To treat these issues, a new model that can handle the peculiarities of zero-inflated count data, the Zero-Inflated Negative Binomial (ZINB) model, was selected on which to re-estimate the effect of *Loss* on *Civilian Targeting* as indicated by Equation (2), (Table 3).

The results of the formal treatment of Hypotheses I and II reveal that both losses and length of the war increase the likelihood of civilian targeting, *ceteris paribus*, and this applies to both rebel and government armies. In all models, parameter estimates for *Loss* and *Time* for both rebel- and government-side actors remained both positive and statistically significant. In short, Hypothesis II is the hypothesis most supported by the empirical evidence. Losing battles in one period significantly increases the likelihood that the loser will target civilians in the next period.

$$\begin{aligned} \text{Deliberate Civilian Targeting (by side)} = \\ \beta_0 + \beta_1(\text{loss}) + \beta_2(\text{time}) + \text{Inflation: } \beta_3(\text{CasTot}) + \varepsilon \end{aligned} \quad (2)$$

A sample substantive interpretation follows for the parameter estimate highlighted in Table 3. This parameter estimate in this case suggests that, among months with massacres, the loss of one more territory by the government side increases the predicted number of massacre events in the next by  $e^{0.215} = 1.24$ . Therefore, battlefield losses increase the likelihood of civilian targeting in the next month by *124 percent*. In other words, the presence of civilian targeting is 1.24 times higher in a month preceded by losses than in any one without losses, and the probability that the observed positive association between these variables is a product of chance alone is less than 1 percent.

**TABLE 2. ERROR CORRECTION MODEL. DV=DELIBERATE CIVILIAN TARGETING**

	<b>REBEL Massacre Events</b>	<b>REBEL Committed Casualties</b>	<b>REBEL Intensity</b>	<b>GOVT Massacre Events</b>	<b>GOVT Committed Casualties</b>	<b>GOVT Intensity</b>
<b>Loss (Count)</b>	<b>0.2***</b> (0.06)	<b>5.95**</b> (2.6)	<b>9.34***</b> (2.45)	<b>0.2***</b> (0.06)	<b>44.29***</b> (5.83)	<b>27.79***</b> (6.25)
Time		0.25** (0.1)		0.003 (0.002)		
Correction: Lagged Residuals	0.16*** (0.06)	0.18*** (0.06)	0.19*** (0.05)	0.09 (0.06)	-0.03 (0.06)	-0.03 (0.06)
CasTot or TotalEvents (K/E)		0.014** (0.007) K		0.023*** (0.005) E		2.96*** (0.48) E
Constant	2.28*** (0.25)	-38.4 (34.36)	51.46*** (10.26)	-1.04 (0.55)	-17.26 (17.57)	-61.77*** (18.38)
N	326	326	326	326	326	326
R-squared	0.07	0.11	0.09	0.21	0.16	0.25
F test Prob >F	12.43 0.000	9.61 0.000	15.13 0.000	20.81 0.000	29.84 0.000	35.14 0.000
Statistical Significance: * = $p < 0.1$ ; ** = $p < 0.05$ ; *** = $p < 0.01$						

## V. ANALYSIS AND DISCUSSION

Formal hypothesis testing aside, let's now think about *why* we might find such strong evidence linking loss events with subsequent massacre events in the Angolan war. Reexamining the historical record and reconnecting with the stories and the language surrounding the events themselves seems to be a logical next step toward fleshing out a theory and causal mechanism that might help better explain this relationship.

Some of the darkest periods of the Angolan war occurred in 1998, after the rebels accrued a series of major territorial losses. UNITA experienced a massive reversal of battlefield fortunes starting in this period, and started down the road toward extinction as a fighting force. It was the beginning of a long, slow demise that ended with the death of Jonas Savimbi in 2002. In this next section, I will turn to a qualitative description of some of the events of this latest period of the war for insight.

How did the war change in this period? One way in which the concept of violence seemed to change was that, in this new period, UNITA began to *take responsibility* for its egregious abuses, rather than vehemently denying them as in times past. In earlier periods, UNITA had either denied responsibility or at least apologized for civilian casualties. But in this new period, UNITA actually admitted to (and seemed to take a certain pleasure in) exploding a passenger train, killing hundreds, and surrounding the train with assailants who shot anyone who tried to escape. Why did UNITA now take responsibility for these crimes?

Other changes in the qualitative, historical record indicate a strange new process afoot. The nature of the violence during this period also changed both in character and form, in the direction of increased brutality. Torture, the sexual mutilation of victims and the dead, and rape, became routine during this period. Gruesome tactics now included death by crucifixion, public witch-burnings, abduction of civilians for slavery and forced portaging, stealing or “taxing” food, the use of human shields in combat, and other forms of unusual torture.

<b>Dependent Variable: N=327</b>	<b>REBEL Massacre Events</b>	<b>REBEL<sup>4</sup> Committed Casualties</b>	<b>REBEL<sup>5</sup> Targeting Intensity</b>	<b>GOVT Massacre Events</b>	<b>GOVT Committed Casualties</b>	<b>GOVT Targeting Intensity</b>
<b>Loss (Count)</b>	<b>0.042**</b> (0.02)	<b>0.064***</b> (0.001)	<b>0.071***</b> (0.001)	<b>0.136***</b> (0.04)	<b>0.215***</b> (0.08)	<b>0.235***</b> (0.07)
Time	0.004*** (0.001)	0.003*** (0.0001)	0.003*** (0.0001)	0.011*** (0.002)	0.013*** (0.003)	0.013*** (0.002)
Constant	-0.39 (0.24)	3.412*** (0.03)	3.24*** (0.03)	-4.87*** (0.93)	-2.08** (1.47)	-2.4*** (1.01)
Total Events	-1.3*** (0.41)	-0.01** (0.004)	-0.02*** (0.006)	-0.47 (0.52)	-0.41*** (0.12)	-0.3*** (-0.09)
Constant	2.18***	-1.13***	-0.56***	2.07	4.31***	2.37***
Zero Obs	98	127	95	253	276	251
Nonzero Obs	229	200	232	74	51	76
LR $\chi^2$ Prob > $\chi^2$	48.12 0.000	4774.17 0.000	6051.91 0.000	47.96 0.000	19.35 0.0001	36.97 0.000
Vuong Statistic Pr > z	z=4.01 0.00	z=4.62 0.000	z=3.79 0.0001	z=2.35 0.01	z=3.11 0.009	z=2.56 0.005
Statistical significance is as follows: * = $p < 0.1$ ; ** = $p < 0.05$ *** = $p < 0.01$ .						

Inge Brinkman (2000) interviewed hundreds of refugees during the late 1990s and found that affected populations during this period began to remark on the way in which the war had seemingly changed. They discussed with dismay reports of impalement, sexual mutilation, and other horrific acts. For example, one of Brinkman’s interviewee’s remarked that, in the past, “people used to matter,” but in recent times civilians were forced to sing, laugh and dance while family members were murdered (Brinkman 2000; 15). A displaced person interviewed by Medecins Sans Frontieres in Huambo remarked, “Now the crimes are meticulous and they are never left half done! I do not know what wars are like elsewhere but here it is no longer enough to just kill! It is necessary to massacre! Even if you survive, you will always have the memory printed on you.” (Medecins Sans Frontieres-USA, 2000).

Finally, the casualty estimates from this period alone speak volumes. A report by the UN in January 1999 said Angola was on the verge of catastrophic breakdown. Terrified civilians crowded into urban centers with tales of atrocities committed by rampaging UNITA forces as UN peacekeepers withdrew from exposed areas.<sup>6</sup> The situation had reached a state of crisis accumulation such that the capacity of people to

cope was stretched beyond the limit. Time and again, civilians reported feeling that they were standing “on the edge of an abyss.”<sup>7</sup> And all of these atrocities happened in the wake of UNITA’s crushing territorial defeat.

Could any strategic logic possibly be behind these heinous crimes? How could losing change incentives when it comes to the treatment of civilian populations? In his seminal work on civilian targeting in civil wars, Stathis Kalyvas explains the conditions under which heinous acts of violence nevertheless progress along using a certain strategic logic (1999, 2006). But how do significant battlefield and territorial losses shape a combatant’s perceptions about the current stage of the war in which he finds himself, and his motives and strategies? From reading individual reports about the nature of the atrocities against civilians in this period, we find some anecdotal evidence suggesting UNITA was fundamentally reframing *who* they considered to be a legitimate target during this period. Combatants were constructing new norms around the legitimate use of violence during this period of loss. Backed against a wall, civilians were no longer to be considered exempt from targeting, because they were no longer considered neutrals and innocents, standing apart from the conflict.

Recall that the distinction between civilians and combatants is a social construct of moral, legal, and ethical import. The idea that civilians should be exempt from the class of legitimate targets rests on the presumption of their innocence. Defining what constitutes a civilian with reference to their supposed innocence, however, is an incredibly unfortunate analytic foundation. The *innocent civilian*, as a *coupling* of terms treated in tandem, actually lays the groundwork for the collapse of the civilian-combatant distinction on the battlefield and the loss of civilian protection (Kinsella 2011; 172–3).

Unfortunately, the normative and legal distinction drawn between civilians and combatants rests on a faulty foundation. That is because *innocence* is never in a static state. From a combatant’s point of view, one who is perceived to be an innocent civilian today might elect to become a ‘traitor’ tomorrow (Kinsella 2011; 172–3). Innocents can always wake up one day and decide to offer the other side support, weapons, or information. And combatants know this. This means that, as battlefield fortunes change, even those who are perceived to be the most innocent are now considered legitimate targets, not for what they have already done, but for what the combatants have calculated they may likely do tomorrow. It is because civilians have this curse: this curse of choice, of opinion, and of the ability to change their minds, then no one is safe. No one is one hundred percent innocent in all times and in all places, and guaranteed to be “innocent” in the future. Combatants calculate the odds of a civilian’s innocence tomorrow, and that calculation is driven by the current context, given recent battlefield events.

The fact that civilians have the ability to choose, and can and do change their mind, makes combatants persistently afraid. But the extent of their fear of civilian defection varies over time, and is significantly dependent on recent events on the battlefield. Combatants are much more afraid of civilian defection when they are losing because they rightly ascertain that the odds of civilian defection have just drastically increased. When the battle is going well, the combatants calculate the risk of defection to be low. However, when the group starts to lose, and especially as the pace, volume, and density of these losses accrue, the fear of civilian defection no longer seems to be as remote as it once was. To hedge against the increasingly likely odds of defecting civilians, combatants preemptively strike out, deliberately honing their violence to appear irrational and harsh in order to send a message to others considering a similar move.

In the wake of widespread territorial and battlefield losses, movements suffer legitimacy problems and can no longer take for granted civilian support. However, in the context of increasing loss, this is precisely the time armies need civilians the most. They desperately need the new recruits, porters, food, and shelter that civilians provide an army on the move. Ironically, civilians may be massacred by a group precisely because they are so essential to the military campaign.

During a period of great losses on the battlefield, combatants are in a special bind. They can no longer tolerate uncertainty. Therefore, defining the “enemy” necessarily expands to include even those who had

been considered stalwart friends. During times of loss, the number of civilians considered potential enemies, traitors, or defectors increases rapidly because the cost of being wrong escalates drastically. And because sustained territorial and battlefield losses increase the odds that civilian allies may defect to join the winning side, losers end up killing civilians of all persuasions, even those allies who had always been considered longtime supporters, in order to scare them and prevent the defection of the rest of the group. In short, the crucial problem of civilian targeting should not be seen as a static phenomenon: rather, loss severely exacerbates this problem (see also Kahneman and Tversky, 1979).

In a context of loss, then, combatants begin to construct a completely new version of the battlespace. In this new construction, everyone is considered a legitimate target. No distinctions are made between civilians and combatants. The warriors have reasonably calculated that the odds of civilian defection are high. Everyone is either a traitor or, at best, a potential traitor, considering the switch.

But do civilians really have this ability to choose, defect, and switch sides? Empirical evidence from other wars suggests that civilians can and do defect to join the winning side if they calculate that switching will increase their odds of survival. For example, in the wars in Mozambique, El Salvador, Vietnam, and Colombia, civilians frequently collaborated with both armies in an attempt to avoid harm (Kalyvas 2006; 328). In fact, it is common practice for civilians caught between multiple warring groups to do their best to stay alive by attempting to please whichever group happens to be in town, in a desperate attempt to increase their chances of survival. In Angola, interviewees admitted that they “danced to the tune of whatever drummer” and made outward attempts at compliance with both armies in order to try to stay alive (Brinkman 2003; 217). Others remarked they witnessed Angolan women and children in military parades, stolidly singing propaganda songs, but that “*The nature of the song depends on who is holding the gun.*”<sup>8</sup>

We know that civilians can and do switch allegiances. They sometimes provide critical information and intelligence to the other side, and this power actually most threatens the ones holding the guns. Thus, civilian targeting appears to be a last-ditch move meant to instill fear sufficient to prevent mass civilian defection. The losers have expanded the set of legitimate targets to include civilians, because the innocence of everyone around them has been called into question. For the losing army, the distinction between civilian and combatant has necessarily blurred in light of this new and rapidly changing context. The hallmark of a losing army may well be its turn toward ever-increasing levels of deliberate civilian targeting. At the very least, such targeting may signal a desperate strategy of last resort.

In order to begin to understand conflict in all of its dynamic complexity, more research programs conducting detailed, event-based analyses of conflict are needed. These detailed datasets can help us form baseline expectations against which hypotheses can be tested, and likely patterns, dynamics and trajectories of modern wars ascertained.<sup>9</sup>

This analysis has also yielded important policy recommendations. The international community should work to find creative ways to help change the calculus for losing belligerents, especially during cease-fire negotiations. Humanitarians should be prepared to deal with the heightened risk that retreating armies pose to civilians. For example, safe havens and humanitarian corridors could be prepared to help civilians caught in the path of a devastated, wayward, and retreating battalion. And at a conceptual level, conversations that can help analytically decouple what is meant by the term “civilian”—and as something distinct from “innocent”—may actually have an effect downstream.

Finally, we can learn from the behavior of civilians themselves, who already seem to instinctively know that they need to do their best to stay out of the way of a losing army. In the fluid uncertainty of war, civilians and combatants alike are constantly changing and updating their strategies, evaluating the current context in all its complexity as best they can, and using these conditions as the garden from which to grow next steps.

**APPENDIX A: EVENT DEFINITIONS, CLASSIFICATIONS, & SUMMARY STATISTICS**

**Conventional battle event:** One or more government-side force(s) militarily engages one or more rebel-side force(s), with a resulting loss of life or property.

**Transfer of territory to rebel force:** A state-side military force loses territory and withdraws, typically after defeat in battle (as reported).

**Transfer of territory to government forces:** A rebel-side military force loses territory and withdraws, typically after defeat in battle (as reported).

**Reported establishment of rebel base or headquarters:** A rare event included as “other” in tables, and not used in this analysis.

**Troop movement or other activity:** A rare event included as “other” in tables, and not used in this analysis.

**Previous territorial transfer to rebels at unknown date:** This event arises when we learn from reading about a new event that a state-side army has seized control over a formerly rebel-held area, but in the peculiar case when we did not know that the rebel-side army had seized it at an earlier date in the first place.

**State-side massacre of civilians:** An event in which one or more state-side groups targets and kills mostly or specifically civilians (unarmed women and children, the handicapped and elderly).

**Rebel-side massacre of civilians:** An event in which one or more rebel-side groups targets and kills mostly or specifically civilians (unarmed women and children, the handicapped and elderly).

<i>Event Type 1960–2002</i>	<i>N</i>	<i>As Percent of Total</i>
Conventional Battle—(#1)	6285	68
Massacre (Rebel)—(#8)	893	9
Massacre (Govt)—(#7)	249	3
Govt loss of territory—(#2 & #6)	733	8
Rebel loss of territory—(#3)	725	8
Other—(#4 & #5)	331	4

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Min</i>	<i>Max</i>	<i>Zero Observations</i>
<i>RebelMassacre</i>	327	2.61	4.28	0	45	98, 30%
<i>GovtMassacre</i>	327	0.73	2.88	0	29	253, 77.4%
<i>RebelCasualties</i>	327	62.35	171.03	0	1610	127, 38.8%
<i>GovtCasualties</i>	327	35.34	315.87	0	5226	276, 84%

## APPENDIX B: SOURCES

- A Capital*, Portugal  
*A Tarde*, Brazil  
ACTSA  
AFP  
AFP Interafrican News Survey  
*Africa Analysis*, Great Britain  
*AfricaAsia*, France  
*Africa Confidential*, Great Britain  
*Africa Economic Digest*, Great Britain  
*Africa News*, US  
*Africa Now*, Great Britain  
*Africa Post*  
*Africa Research Bulletin*  
*Africa South*, Zimbabwe  
*Africa Watch*  
*African Business*, Great Britain  
*African Bulletin*, Zimbabwe  
*African Recorder/Chronicle*, New Delhi  
Agencia de Informacoes de Mozambique  
*Alem Mar*, Portugal  
Amnesty International, “Angola and Namibia—  
Human Rights abuses in the border  
area”  
ANC Weekly News Briefings  
Angola Cronologia  
*Angola Information*, Great Britain  
*Angola Observer*, US  
Angola Peace Monitor  
Angola Press Agency  
Angola: US Policy and Human Rights violations  
Angop, Great Britain  
Anop Cronologia  
*Anti-Apartheid News*, Great Britain  
Associated Press  
*Awepaa News Bulletin*, Netherlands  
BBC  
BBC Monitoring Report  
*Business Day*, SA  
Horace Campbell, *The Siege of Cuito Cuanavale*  
*Cape Times*, SA  
Capital  
*Christian Science Monitor*, US  
*Chronicle*, Zimbabwe  
*Citizen*, SA  
*Cm*, Portugal  
Communique de presse, Ambassade d'Angola,  
Belgium  
Comunicado de Guerra, UNITA  
Cronologia dos principais acontecimentos,  
ANGOP  
*Dagens Nyheter*, Sweden  
*Daily News*, Tanzania  
*Daily Telegraph*, Great Britain  
*Die Zeit*, Germany  
*Diario de Leiria*, Portugal  
*Diario de Lisboa*, Portugal  
*Diario de Noticias*, Portugal  
*Diario Economico*, Portugal  
*Diario Popular*, Portugal  
Do Alvor a Lusaka  
*Economist*  
*Efe*, Spain  
*El Pais*, Spain  
*Embaixada da Angola*, Portugal  
*Europeau*  
*Expresso*, Portugal  
*Facts and Reports*  
Folha 8, Angola  
*Financial Mail*, SA  
*Financial Times*, Great Britain  
*Guardian Weekly*, Great Britain  
*Guardian*, Great Britain  
*Guardian*, US  
Human Rights Watch, “Between War and  
Peace—Arms Trade and Human Rights  
Abuses Since the Lusaka Protocol”  
*Independent*, Great Britain  
*Independente*, Portugal  
*International Herald Tribune*  
IPS Africa  
Jamba  
*Jane’s Defense Weekly*  
*Jornal de Angola*  
*Jornal de Noticias*, Portugal  
*Jornal o Dia*, Luis Rodrigues, ISCTE Lisbon  
Keesings  
Guy Lamb, *Putting Belligerents in Context*  
*La Republique*, Algeria  
*LA Times*  
David Lea, *Political Chronologies of the World*  
*Le Matin*, Morocco  
*Le Monde*  
Lisboa, Angola Chronologia  
Lusa  
Lusa, O Seculo, Brazil, Angola Press Agency  
*Lusa*, Portugal

- Luxemburger Wort*  
Media Institute of Southern Africa  
Military Communique from Battle Front in  
Angola  
*Mmegi*, Botswana  
MPLA War Communique  
Namibian  
National Society for Human Rights, Windhoek  
*New African*, Great Britain  
*New Era*, Namibia  
*New Nation*, SA  
*New York Times*, US  
*News Bulletin*, Armed forces for Liberation of  
Angola  
Morgan Norval, *Death in the Desert*  
*Noticias*, Mozambique  
*NRC Handelsblad*, Holland  
*O Dia*, Brazil  
*O Diario*, Portugal  
*O Jornal*, Portugal  
*O Seculo*, Portugal  
*O Tempo*, Brazil  
*Observer*, Great Britain  
Politico do Comite Central, Freeland of Angola  
Portugal Hoje  
*Publico*, Portugal  
Radio Report (RR): AFP in French  
RR: Angola Press Agency in Portuguese  
RR: Angop in English  
RR: Angop in French  
RR: Capital Radio, Umtata  
RR: Dar Es Salaam home service in English  
RR: Havana home service  
RR: Johannesburg in English  
RR: Johannesburg home service in Afrikaans  
RR: Johannesburg in English for abroad  
RR: KUP in English (UNITA press)  
RR: KUP in French  
RR: Lisbon home service  
RR: Lourenco Marques in Portuguese  
RR: Luanda home service in Portuguese  
RR: Maputo in Portuguese  
RR: Pana  
RR: Radio France Internationale, Paris  
RR: Radio Mozambique  
RR: Radio Nacional de Angola  
RR: Radio Renaissance, Lisbon  
RR: Radio South Africa  
RR: Radiodifusao Portuguesa Internacional  
RR: SABC Channel Africa, Johannesburg  
RR: Tanjung  
RR: Tass in English  
RR: Televisao Popular de Angola  
RR: Televisao Portuguesa Internacional  
RR: VORGAN in Portuguese  
*Rand Daily Mail*, SA  
*The Register*, Great Britain  
Reuters  
SA Report, June 1985  
SABC-TV, Johannesburg  
Semanao Angolense  
*Sempre Fixe*, Portugal  
*Southern Africa Report*, SA  
*SouthScan*, Great Britain  
*Sowetan*, SA  
*Star Weekly*, SA  
*Star*, SA  
*Sunday News*, Tanzania  
*Sunday Times of Zambia*  
*Tass, International Herald Tribune*  
*The Mail*, Great Britain  
*Times of Zambia*  
*Times*, Great Britain  
UNITA War Communique  
UNITA, Myth and Reality  
UNITA: Comunicados de Guerra  
Uppsala  
*Visão*, Cape Verde  
VORGAN  
War Communique from FALA, CIDAC  
War Crimes & Other Atrocities, Namibia  
*Washington Post*, US  
*Weekly Mail and Guardian*, SA  
*West Africa*, Great Britain  
*West Africa*, Nigeria  
White Paper on Acts of Aggression  
*Windhoek Advertiser*, Namibia  
*Windhoek Observer*, Namibia  
*Zambia Daily Mail*

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## ENDNOTES

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<sup>2</sup> USAID. [www.usaid.gov/.../angola/thumbs/ang2.jpg](http://www.usaid.gov/.../angola/thumbs/ang2.jpg)

<sup>3</sup> The operationalization of (c) above creates a measure of intensity that is the sum of twice the number of massacre events per month plus casualties. This transformation has the effect of assigning every massacre event where casualty estimates are unknown only two casualties. Assigning one or two casualties to a massacre event with an unknown number of casualties is almost always a drastic underestimation of the severity of the event, so it is an attempt to equally weight massacre *events* with *casualty estimates*. To test model sensitivity I also estimated each model below using Intensity =  $2a + b$ ,  $3a + b$ ,  $5a + b$ , and  $10a + b$ , and results from these estimations will be made available upon request. Critically, parameter estimates and statistical significance on all variables remained robust to changes in the operationalization of the dependent variable. Results reported in Table 2 utilize the first algorithm, where Targeting =  $2(\text{events}) + \text{casualties}$ .

<sup>4</sup> Vuong tests of these parameters with zinb suggest Zero Inflated Poisson (ZIP) model is a better fit; ZIP is reported here.

<sup>5</sup> Estimated using a Zero-Inflated Poisson model.

<sup>6</sup> Africa Research Bulletin, January 1999.

<sup>7</sup> Report: Angola, a tangled web: Many players in a complex war, World Vision, UK: July 2000.

<sup>8</sup> Fighting brings hunger to a land of plenty, by Victor Mallet. *Financial Times*, Great Britain: June 29, 1988. Emphasis mine.

<sup>9</sup> Thankfully, scholars will now be cursed with the opposite problem: because of recent changes in technology that allow us to hear voices from all around the world in near-real time on Twitter, Facebook, and via SMS, you no longer have to go after data, you are awash in too much of it.

**LEGAL STATUS AND DIFFERENCES IN WORK FLEXIBILITY  
AMONG SELF-EMPLOYED WOMEN:  
THE CASE OF ST. CROIX COUNTY, WISCONSIN**

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**ABSTRACT**

Data collected on self-employed women in St. Croix County, Wisconsin, allow examination of differences in work flexibility based on the legal status of their firms. Logit estimates indicate negative effects for the work hours under 35, suggesting women who prefer flexible work select the unincorporated sector. Positive effects for work hours over 45 are consistent with less flexibility in incorporated self-employment. Estimates between sole proprietors-partners and the incorporated sector indicate an anomalous positive effect for children 6 to 13. This may reflect factors that include older children in this age range helping out or reliance by incorporated women on day care. Results within unincorporated self-employment are ambiguous. Selection between sole proprietors-partners and limited liability companies indicates greater flexibility due to positive effects for children under 6 and work hours under 35. The positive effects of children 14 to 18 and work hours over 45, however, suggest less flexibility for women operating limited liability companies. Estimates of selection into independent contracting indicate positive effects for children under 6 and 6 to 13 (consistent with more flexibility) and children over 18 (suggesting less flexibility) (JEL J22, J23).

## I. INTRODUCTION

This paper uses data collected on self-employed women in a single county to examine differences in work flexibility based on their status as unincorporated and incorporated firms. The study extends Taniguchi (2002) who indicated controlling for unincorporated and incorporated legal status may clarify results, based on the number of young and older children, suggesting self-employment does not offer greater work flexibility compared to the wage and salary sector. The study also extends previous research by examining differences in work flexibility among women in self-employment based on their preferences for a nonstandard workweek.

The organization of the paper is as follows. Section II presents the literature review. Section III provides a description of the data. Section IV presents a discussion of the legal categories of self-employment as they relate to work flexibility and states the hypotheses to be tested. Section V presents the model and variables used in the analysis. Results are presented in section VI followed by the conclusion.

## II. LITERATURE REVIEW

Studies suggest women select self-employment as a strategy to combine the responsibilities of work and family (MacPherson, 1988; Connelly, 1992; Carr, 1996, Lombard, 2001). The main hypothesis is that self-employment, compared to the wage and salary sector, offers women—planning both career and family—greater work flexibility in order to manage household responsibilities.

These studies, which employed cross-section data, used two measures to test the flexibility hypothesis. age.<sup>2</sup> The second is nonstandard work hours indicating a preference for work above or below forty hours per week (MacPherson, 1988; Lombard, 2001). Results supported the flexibility hypothesis by indicating more preschool or school age children encouraged the entry of women into self-employment compared to the wage and salary sector. Flexibility was also suggested by results indicating a stronger preference for nonstandard work hours (above and below 40 hours per week) among self-employed women compared to those in wage and salary work.

Taniguchi (2002) suggested self-employment may not provide the flexibility indicated in these earlier studies. Using longitudinal data, Taniguchi (2002) found that having more preschool children did not encourage women to enter the self-employment sector.<sup>3</sup> In addition, Taniguchi (2002) departed from the previous research by hypothesizing that older children allow women in self-employment to take on less flexible work because they can “help out” with housework or at the business. Using the measure *total number of children greater than or equal to six years*, Taniguchi (2002) found that older children encouraged women to select self-employment consistent with the helping out effect. The “helping out” hypothesis also calls into question the interpretation of results in the previous studies suggesting the correlation between having older children and the entry of women into self-employment is consistent with flexible work.

Taniguchi (2002) indicated results may be clarified by controlling for different types of self-employment. Having more preschool children may encourage women to select lower-skilled self-employment such as in-home child care, hairdresser, and other personal services which allow greater work flexibility. Having more older children, who can help out, allows women to enter higher skilled occupations such as medicine, accountancy, or law, which may be as inflexible as many wage and salary jobs. Taniguchi (2002) suggested a possible way to account for these differences is to use unincorporated legal status as a proxy for lower-skilled firms. At the same time, incorporated legal status could provide a measure of higher-skilled self-employment.

Carr (1996) estimated an employment selection model that controlled for unincorporated and incorporated self-employment. Results indicated having more children under six encouraged women to select only unincorporated self-employment. At the same time, women with older children (in the age range 6 to 17) entered only incorporated self-employment. Carr (1996) took this as evidence of the same degree of work

flexibility in both sectors. The results are consistent with Taniguchi's (2002) speculation regarding greater work flexibility in unincorporated compared to incorporated self-employment.

A question arises regarding the degree to which a broad measure of older children captures a helping out effect. Helping out may be most applicable to children in high school who have the level of maturity to take on additional responsibilities. Women with children in elementary and middle school may still desire flexible work that corresponds to the school day. In addition, including in the measure of older children those who are beyond high school (as Taniguchi (2002) does) may include a preference for less flexibility due to more available time as children become independent, rather than to a "helping out" effect.

There is also a question regarding how the demand by self-employed women for nonstandard work hours relates to their preferences for flexible work. It is plausible that women seeking flexibility in self-employment would prefer to work fewer than 40 hours per week. Those women who are more committed to their careers in self-employment, then, would prefer work exceeding the standard 40-hour workweek.

This study employs cross-section data, collected on a sample of women in St. Croix County, Wisconsin, that allows examination of determinants of selection between unincorporated and incorporated self-employment. In contrast to previous research, the study focuses exclusively on determinants of selection within self-employment with no comparison to the wage and salary sector. The study, however, is able to test for differences in work flexibility between these sectors using a measure for number of children divided into the age ranges *under 6*, *6 to 13*, *14 to 18*, and *over 18*. This allows examination of the preference self-employed women have for flexible work because their children are young (under 6 and 6). The study also goes beyond previous research because data on work hours allow examination of selection between the unincorporated and incorporated sectors based on the preferences self-employed women have for the nonstandard workweek. Finally, information on the specific legal status of firms allows examination of differences in work flexibility within unincorporated and incorporated self-employment. This provides insight as to whether using the broad categories of unincorporated and incorporated self-employment overlooks other systematic differences in work flexibility.

### **III. THE DATA**

The analysis uses data collected in 2004 as part of a larger study examining the determinants of earnings differences between self-employed women and men in St. Croix County, Wisconsin.<sup>4</sup> Identification of the self-employed population in St. Croix County took place during the summer of 2004. The directory Reference USA provided a list of more than 3,000 small businesses (defined as having 1–499 employees) operating in St. Croix County. Eliminated from the list were firms not operated by the self-employed. Also dropped were firms whose main activities were in the agricultural sector. In the end, the search identified 2,205 self-employed, 587 of whom were women.<sup>5</sup>

Data collection involved first sorting the population by gender. Random samples of 450 observations were selected from each of the female and male populations. Questionnaires were mailed during the last week of October 2004. After two follow-ups (which included the mailing of a reminder card and then a second questionnaire), female respondents returned 194 questionnaires, for a 44 percent response rate. Male respondents returned 203 questionnaires for a 45 percent response rate.<sup>6</sup> The analysis below employs the data received from the female respondents.

The questionnaire obtained information on the legal status of these businesses and control variables influencing self-employment selection. The legal status categories are sole proprietorship, partnership, independent contractor, limited liability company, S corporation, and C corporation. The variables influencing self-employment selection include previous work experience, hours worked per week, number of children, education, marital status, and reliance on husband's health insurance.

#### IV. LEGAL STATUS, WORK FLEXIBILITY, AND HYPOTHESES

The analysis assumes incorporated status (C corporation and S corporation) represents the least flexible category of self-employment. Incorporation provides the self-employed with advantages in terms of tax benefits for retirement accounts and liability protection (Carr, 1996). In addition, incorporated self-employed workers have enhanced access to capital and the ability to attract employees (SBA, 2010). These advantages are consistent with the self-employed having a strong commitment to the labor market, which is reflected in the findings of Devine (1994), indicating 79 percent of women operating incorporated firms are full-time workers.<sup>7</sup>

Unincorporated self-employment offers greater work flexibility. Included among unincorporated self-employed are sole proprietors (firms owned by one person), partners, independent contractors, and limited liability companies. The predominant form of organization in unincorporated self-employment is sole proprietorship (Lowry, 2005).<sup>8</sup> Flexibility for sole proprietors derives from factors that include complete control over operating decisions and low costs in starting (or dissolving) a business (SBA, 2010). Partnerships gain flexibility if there is cooperation and skills of the partners are complementary. Independent contractors control when the output is produced (IRS, 2010), which may provide as much flexibility as a sole proprietor. Limited liability companies (which offer liability protection similar to incorporated self-employed) often have single owners (DeBaise, 2009) and may have flexibility similar to a sole proprietorship.<sup>9</sup>

It is possible there are differences in flexibility within types of incorporated and unincorporated self-employment. For example, within incorporated self-employment, C corporations—to avoid double taxation on distribution of dividends—may invest in more capital (DeBaise, 2009). This may result in larger operations with less flexibility compared to S corporations.<sup>10</sup> In addition, within unincorporated self-employment, partnerships may be less flexible than sole proprietorships if operations are larger and there is not cooperation among owners. This may also be the case for limited liability companies that are partnerships. It is not clear, however, the degree to which systematic differences in work flexibility exist within the incorporated and unincorporated sectors. As a result, the analysis below will focus on the following hypotheses (stated in the alternative form):

*H1: Women with more children under six years of age select flexible work in unincorporated self-employment.*

*H2: Women with more children in elementary and middle school (6 to 13 years old) will select flexible work in unincorporated self-employment.*

*H3: Women with more children in high school (14 to 18 years old), because they benefit from a 'helping out' effect, will select less flexible work in incorporated self-employment.*

*H4: Women with more children beyond high school (over 18 years old) will seek less flexible work in incorporated self-employment due to more available time because their children are independent.*

*H5: Women who prefer to work less than 40 hours per week will seek flexible work in unincorporated self-employment.*

*H6: Women who prefer to work more than 40 hours per week will seek less flexible work in incorporated self-employment.*

The analysis also compares differences in work flexibility between sole proprietors, partners, independent contractors, limited liability companies, S corporations and C corporations. When comparing sole proprietors to the other legal structures within unincorporated self-employment (i.e., partners, independent contractors, and limited liability companies) the analysis assumes the null hypotheses of no difference in work flexibility. The hypotheses as stated above, however, are assumed to hold when comparing sole proprietors to S corporations and C corporations.

## V. THE MODEL

The analysis employs the following self-employment selection model:

$$\Pr(\text{SES}_i=j)=\alpha_0 + \alpha_1F_i + \alpha_2\text{HC}_i + \alpha_3R_i + \varepsilon_i \quad (1)$$

where  $\text{SES}_i$  represents self-employment sector,  $F_i$  is a vector measuring work flexibility,  $\text{HC}_i$  includes controls for human capital,  $R_i$  measures family resources, and  $\varepsilon_i$  is the random error term. Assuming the  $\varepsilon_i$ 's are randomly distributed, the analysis uses binomial logit to estimate equation (1) when the dependent variable consists of two categories (unincorporated vs. incorporated self-employed). Multinomial logit is used when the dependent variable is six categories (sole proprietors, partners, independent contractors, limited liability companies, and S corporations and C corporations).

Table 1 presents variable definitions and the anticipated signs of the coefficients when examining selection between unincorporated (the reference category) and incorporated self-employment. The signs also hold in the six-category model when comparing sole proprietors (the reference category) to S and C corporations. The H1 hypothesis indicates the presence of more young children encourages women to seek flexible work in unincorporated self-employment. As a result, the coefficient *children under 6* should be negative. Women with children in elementary and early middle school may also seek greater work flexibility (H2 hypothesis). In this case, the coefficient for children 6 to 13 should be negative indicating these women seek work in the unincorporated sector.

The H3 and H4 hypotheses suggest self-employed women with older children take on less flexible work. If this is due to a 'helping out' effect (H3) then the *children 14 to 18* coefficient should be positive as women seek employment in the incorporated sector. If it is due to more available time because their older children are independent (H4), then the coefficient for children 18+ should be positive.<sup>11</sup>

Greater work flexibility is also indicated by the preference of self-employed women for work that is less than forty hours per week (H5). In this case the coefficient for work hours under 35 should be negative as women seek work in unincorporated self-employment. If self-employed women prefer less flexible work the *work hours over 45* coefficient should be positive as they seek work in the incorporated sector.<sup>12</sup>

Among the remaining variables, if incorporation requires more human capital (Aronson, 1991; Carr, 1996) then the coefficients for education and experience should be positive. At the same time, the coefficient for previous part-time work should be negative. Previous research indicates family resources (measured by marriage (Carr, 1996; Taniguichi, 2002) and husbands' health insurance (Lombard, 2001)) encourage the entry of women into the self-employment sector. Within self-employment, however, family resources may be more important to women in unincorporated self-employment. This is due to lower salaries (Devine, 1994; Aronson, 1991) and less access to capital (SBA, 2010) among the unincorporated self-employed. In addition, unincorporated self-employed women may be more reliant on their husbands' health insurance. This is because they do not qualify for tax breaks in purchasing health insurance if their spouse is eligible for coverage from an employer (Kaiser, 2008). The coefficients for marriage and husband's health insurance, then, should be negative.

## VI. RESULTS

### A. DESCRIPTIVE STATISTICS

Table 2 presents mean values and difference tests between incorporated and unincorporated self-employment (columns (2)–(4)). Also presented are mean values and difference tests within the incorporated (columns (5)–(7)) and unincorporated (columns (8)–(14)) sectors. The results for nonstandard work hours in columns (2)–(4) provide support for H5 and H6. As indicated, the proportion of unincorporated self-employed women who work under 35 hours is higher suggesting greater flexibility compared to the incorporated sector (H5). At the same time, a higher proportion of women in incorporated self-employment work over 45 hours, consistent with less flexibility in that sector (H6).

Results in columns (2)–(4) indicate higher average education among women in the incorporated sector. This supports the hypothesis that incorporated self-employed women have higher levels of human capital.

The family resource measures suggest unincorporated self-employed women rely more heavily on husbands' health insurance as hypothesized. The results do not suggest unincorporated self-employed women gain additional access to resources through marriage.

Within incorporated self-employment (Columns (5)–(7)) a higher proportion of women operating S corporations work under 35 hours suggesting greater flexibility compared C corporations. Results for work hours over 45 and children at home, however, do not indicate differences in flexibility between women operating these two types of incorporated firms.

Results within unincorporated self-employment indicate women in limited liability companies, independent contracting, and partnerships have differences in flexibility compared to sole proprietors. Women operating limited liability companies (columns ((8)–(9)) have both more and less flexibility. More flexibility is indicated by higher mean values for young children (*under 6* and *6 to 13*) and work hours under 35. Less flexibility is indicated by higher averages for older children (*14 to 18* and *over 18*). Independent contractors (columns (10)–(11)) have more children 6 to 13 suggesting greater flexibility than women in sole proprietorships. Women in partnerships (columns (12)–(13)) have less flexibility than sole proprietors, which is indicated by fewer children under six and more children over 18.

## **B. LOGIT ESTIMATES**

Table 3 presents coefficients (both log of odds and marginal effects) of a binomial logit which examines selection between unincorporated and incorporated self-employment. The six category multinomial logit could not be estimated since there are no women in C corporations who work under 35 hours per week (see Table 2). Also, the women in partnerships are all married and do not have any children under six (see Table 2). Instead, Table 4 presents log of odds and marginal effects coefficients of a four category multinomial logit that merges C corporations with S corporations (incorporated self-employment) and sole proprietors with partners (sole proprietors-partners).<sup>13</sup>

The analysis does include a six-category multinomial logit that excludes the homogeneous variables *work under 35 hours per week*, *married*, and *children under 6*. These results are presented in Table A1 of Appendix A. Also included in Appendix A is a discussion of those results.

The results in Tables 3 and 4 related to differences in work flexibility between unincorporated and incorporated self-employment are mixed. The negative effects for work hours under 35 in Table 3 and Table 4 (Model (1)) are consistent with H5 suggesting women seeking greater flexibility from fewer work hours select unincorporated self-employment. In Table 4 (Model (1)) the positive log of odds coefficient for work hours over 45 is consistent with the H6. The positive log of odds and marginal effects coefficients for children 6 to 13 in Model (1), however, suggest women find greater flexibility in the incorporated sector compared to sole proprietors-partners, which is not consistent with H2.

The coefficients in Table 4 (Model (2)) confirm the results suggesting women in limited liability companies have both more and less flexibility compared to sole proprietors (and partners). The positive effects for children under 6 and work hours under 35 suggest women in limited liability companies seek greater flexibility. At the same time, the positive effects for children 14 to 18 and work hours over 45 suggest women operating limited liability companies prefer less flexible work.

The results in Table 4 (Model (3)) indicate independent contractors also prefer more and less flexible work compared to sole proprietors-partners. In this case preference for more flexibility is indicated by the positive effects for children under six and children 6 to 13. The preference of women in independent contracting for less flexible work is suggested by the positive coefficient for children over 18.

Among the remaining results, the coefficients for education and experience in Table 3 and Table 4 (Model (1)) are consistent with the hypothesis that self-employed women with higher levels of human

capital select the incorporated sector. The family resource coefficients in these estimates suggest women in unincorporated self-employment rely on husbands' health insurance as hypothesized.

### C. DISCUSSION

The positive effect of children 6 to 13 in Table 4 (Model (1))—though contrary to the H2 hypothesis—may be consistent with less flexible work for women in the incorporated sector. Mean values for nonstandard work hours (Table 2) suggest less flexibility due to a higher proportion of incorporated women (58 percent) who work over 45 hours per week compared to sole proprietors (41 percent) and partners (36 percent). A lower proportion of women in the incorporated sector work under 35 hours per week than among sole proprietors and partners (7 percent compared to 24 and 27 percent). This suggests the positive *children 6 to 13* coefficient could reflect a 'helping out' effect due to older children in this age range. In addition, these self-employed women may rely on before and after school day-care programs to extend the working day. It may also be the case that husbands contribute to housework (Bianchi et al.; 2006) which allows these women to make stronger commitments to their businesses.<sup>14</sup>

The results suggest there may be sources of flexibility in the unincorporated sector—associated with control over when and where work is accomplished—not captured by the measures used in this study. In Table 3, the insignificance of the work hours over 45 coefficients suggest work is not less flexible for women in the incorporated sector. Contributing to the insignificance of the work hours over 45 coefficients, however, may be the high proportion of independent contractors in the unincorporated sector (60 percent as indicated in Table 2) who work over 45 hours per week. In this sample, 70 percent of women in independent contracting are real estate agents who can perform work in the evenings, on weekends, and directly in the home (Bureau of Labor Statistics, 2011). This additional flexibility may not be available to women who work long hours in incorporated self-employment.

The contradictory results regarding work flexibility in Table 4 (Model (2)) may reflect the unique characteristics of limited liability companies. DeBaise (2009) indicates the limited liability structure is relatively new and increasingly popular among the self-employed because it offers liability protection (similar to the incorporated sector) and, as noted above, has a less formal management structure. Limited liability companies could appeal to women with a strong commitment to the labor market who want liability protection but prefer less formal management. At the same time, this structure could appeal to women seeking the flexibility of a sole proprietorship but who see advantages in obtaining liability protection.<sup>15</sup>

The results in Table 4 (Model (3)) indicating more and less flexibility among independent contractors, may reflect the variety of opportunities available to real estate agents in this sample due to the robust housing market in St. Croix County at the time of data collection (2004). The positive effect of children under six could reflect part-time opportunities available in real estate to women with young children at home. At the same time, the positive effect for children 6 to 13 is consistent with part-time work, though there may be a stronger commitment to the labor market due to flexibility women in real estate may have to tailor work around the school day. These opportunities for women with young children could be reinforced by the flexibility to perform work at home, in the evenings, or on weekends when husbands (or other family members) can help with child care.<sup>16</sup> The positive effect of children over 18 may indicate the ability of some of these women to take on more work in the expanding housing market because of the independence of their children.

In Table 4 (Model (1)) the signs of both the log of odds and marginal effects coefficients for nonstandard work hours support H5 and H6. The results indicate, however, that only the marginal effect for work hours under 35 achieves significance. At the same time, only the log of odds coefficient is statistically significant for work hours over 45. These differences most likely reflect error related to the small sample. It cannot be ruled out, however, that they reflect the calculation of marginal effects at the mean values of the independent variables. The significant negative marginal effect for work hours under 35 in Model (1)

may be factoring in the high proportion of sole proprietors (and partners) who rely on their husbands' health insurance (see Table 2). This result could therefore capture an additional effect—these self-employed women view themselves as secondary income earners who are more likely to select sole proprietor-partner because it allows a weaker career orientation than work in the incorporated sector. This could also explain the insignificant marginal effect coefficient for *works more than 45 hours*. A self-employed woman who relies on her husband's health insurance (and views herself as a secondary income earner) may be less likely to select incorporated self-employment—which suggests a strong career orientation—even though she works over 45 hours per week.<sup>17</sup>

## VII. CONCLUSION

These results suggest the different preferences self-employed women have for nonstandard work hours influence the sector they select. Specifically, women preferring to work under 35 hours per week select more flexible work in unincorporated self-employment. Women who prefer to work over 45 hours per week select incorporated self-employment over sole proprietor-partners.

The results do not support the hypothesis that women select less flexible work in incorporated self-employment due to a 'helping out' effect from children in the 14 to 18 age range. The positive effect of children 6 to 13 on selection of women into incorporated self-employment (from sole proprietors-partners), however, may reflect 'helping out' by older children in this age range. In addition, these self-employed women may rely on day-care programs and help from their husbands to extend the working day. Knowledge of these factors could help clarify this result. Knowledge of these factors could also clarify the result in Carr (1996), indicating the positive effect of children in the age range 6 to 17 on the selection of women into incorporated self-employment.

The findings regarding limited liability companies suggest reason for caution in using the unincorporated and incorporated sectors to capture differences in work flexibility within self-employment. These results indicate limited liability companies attract women who are both more and less committed to their businesses. If limited liability companies, which are increasingly popular, tend to attract relatively more women with a strong commitment to their firms this may reduce the difference in work flexibility measured by unincorporated and incorporated self-employment.

The results also point to additional sources of work flexibility not captured by the nonstandard work hours measure. Results indicate women in independent contracting work the same long hours as their counterparts in incorporated self-employment. Independent contractors, however, may still have more flexibility due to greater control over when and where the work is accomplished.

With these qualifications in mind, future research should pursue examination of women's selection between unincorporated and incorporated self-employment to measure differences in work flexibility. Number of children and nonstandard work hours, information available in commonly used datasets, provide useful measures of the preferences in work flexibility of self-employed women to include in the analysis. It would be helpful, however, to find data that also measure degree of control self-employed women have over time and place of work. In addition, measures of the degree to which self-employed women rely on day care and family member contributions to housework could help clarify results. If these additional measures are not available in commonly used datasets then case studies at a local level using questionnaires that provide direct information on the degree of work flexibility at the firm, day care use, and 'helping out' effects could increase our understanding of the preferences self-employed women have for flexible work.

## APPENDIX A

Consistent with the analysis above, results in Table A1 are mixed regarding differences in work flexibility between the incorporated and unincorporated sectors. The positive work hours greater than 45 coefficients, in Models (1) and (2), support H6. In Model (2) the positive *children 6 to 13* coefficients do not support H2.

Also consistent with the previous analysis are results indicating differences in flexibility within the unincorporated sector. Again the coefficients suggest women preferring both less and more flexibility select limited liability companies (Model (3)). As in the analysis above less flexibility is indicated by the positive coefficients for children 14 to 18. More flexibility, however, is indicated by the negative effects for children over 18, which was not the case before. This could reflect specification error due to the exclusion of children under 6 and the other homogeneous variables.<sup>18</sup> In Model (4) the positive effects of children 6 to 13 and over 18, which indicate women preferring more and less flexibility select independent contracting, are consistent with the previous analysis. Also to be noted, Model (5) indicates a positive effect for children over 18. This supports the results in Table 2 suggesting women in partnerships prefer less flexibility based on the higher proportion of children over 18 compared to sole proprietors.

Results in Table A1 suggest distinct patterns in selection between the unincorporated and incorporated sectors not revealed in the analysis above. In particular, women with more children 6 to 13 and who have higher levels of human capital (both education and experience) select only into S corporations. In addition, it is only relative to S corporations that sole proprietors indicate a significantly greater reliance on husbands' health care. These patterns may reflect the unique characteristics of this sample. They may also be related to error given the small sample size. In addition, the results may be sensitive to the exclusion of the homogeneous variables.

**TABLE 1. VARIABLE DEFINITIONS AND ANTICIPATED SIGNS**

<b>Variable</b>	<b>Definition</b>	<b>Sign<sup>a</sup></b>
<b>Dependent</b>		
Type of Self-Employment (Two Categories):	=1 if incorporated business; =0 if unincorporated business	
Type of Self-Employment (Six Categories):	= 5 if C corporation; =4 if S corporation; =3 if LLC; =2 if independent contractor; =1 if partnership; =0 if sole proprietor	
<b>Independent</b>		
<i>Human Capital</i>		
Education	Number of years of school	+
Experience	Number of years worked	+
Part-Time Work Previous 3 Jobs	Years of part-time work 3 previous jobs	-
<i>Family Resources</i>		
Married	=1 if married; =0 if otherwise	-
Husband's Health Insurance	=1 if relies on husband's health insurance; =0 if otherwise	-
<i>Work Flexibility</i>		
<i>Children at Home</i>		
Children < 6	Number of children under 6 years old	-
Children 6 to 13	Number of children age 6 to 13 years old	-
Children 14 to 18	Number of children age 14 to 18 years old	+
Children 18+	Number of children over 18 years old	+
<i>Nonstandard Work Hours</i>		
Work Hours < 35	=1 if works less than 35 hours per week; =0 if otherwise	-
Work Hours > 45	=1 if works more than 45 hours per week; =0 if otherwise.	+

<sup>a</sup>Anticipated sign when selecting between unincorporated and incorporated self-employment. Also when selecting between sole proprietorship and S and C corporation. The null hypothesis holds in selection between sole proprietorship and the other structures in unincorporated self-employment (partnership, independent contractor, and limited liability companies).

TABLE 2. MEAN VALUES AND TESTS OF DIFFERENCES

Independent Variable (1)	Incorporated vs. Unincorporated			Within Incorporated			Within Unincorporated						
	Incorp (2)	Unincorp (3)	t-test: Diff in Mean (4)	C Corp (5)	S Corp (6)	t-test: Diff in Mean (7)	Limited Liability Company (8)	t-test: Diff in Mean <sup>a</sup> (9)	Independent Contractors (10)	t-test: Diff in Mean <sup>b</sup> (11)	Partner (12)	t-test: Diff in Mean <sup>c</sup> (13)	Sole Proprietor (14)
<b>Human Capital</b>													
Education	15.61 (61)	14.75 (112)	1.78* (4)	14.75 (16)	15.9 (45)	-1.19 (7)	15.08 (21)	1.71* (9)	14.33 (15)	-1.6 (11)	15.09 (11)	.55 (13)	14.44 (65)
Experience	28.64 (57)	26.25 (106)	1.53 (4)	28.79 (14)	28.59 (43)	.07 (7)	22.19 (21)	-2.25** (9)	22.00 (14)	-2.01** (11)	34.71 (7)	2.50** (13)	27.59 (64)
Part-Time Work	1.81 (56)	2.15 (107)	-.55 (4)	2.46 (14)	1.59 (42)	.94 (7)	1.61 (21)	-.05 (9)	3.18 (14)	.97 (11)	4.90 (10)	1.74 (13)	1.66 (62)
<b>Family Resources</b>													
Married	.79 (61)	.75 (112)	.54 (4)	.75 (16)	.80 (45)	-.41 (7)	.66 (21)	-.63 (9)	.73 (15)	-.04 (11)	1.00 (11)	4.76*** (13)	.74 (65)
Husband's Health Insurance	.33 (58)	.48 (101)	1.97** (4)	.31 (16)	.33 (42)	-.15 (7)	.23 (21)	- (9)	.53 (13)	-.10 (11)	.54 (11)	-.05 (13)	.55 (56)
<b>Work Flexibility</b>													
Children at Home	.12 (60)	.19 (112)	-1.04 (4)	.07 (15)	.13 (45)	-.60 (7)	.43 (21)	1.95* (9)	.27 (15)	1.04 (11)	.00 (11)	-2.39** (13)	.12 (65)
Children < 6	.54 (61)	.51 (112)	.23 (4)	.38 (16)	.60 (45)	-.96 (7)	.81 (21)	2.13** (9)	.93 (15)	3.17*** (11)	.45 (11)	.41 (13)	.32 (65)
Children 6 to 13	.36 (61)	.35 (112)	.04 (4)	.44 (16)	.33 (45)	.53 (7)	.62 (21)	1.71* (9)	.33 (15)	.236 (11)	.27 (11)	-.12 (13)	.29 (65)
Children 14 to 18	1.15 (61)	1.19 (112)	-.19 (4)	1.69 (16)	.96 (45)	1.50 (7)	.33 (21)	- (9)	1.07 (15)	-.65 (11)	2.36 (11)	2.65*** (13)	1.29 (65)
Children 18 +													
Nonstandard Work Hours	.07 (60)	.29 (110)	- (4)	00.0 (15)	.09 (45)	- (7)	.52 (21)	2.30** (9)	.20 (15)	-.31 (11)	.27 (11)	.24 (13)	.24 (63)
Work Hours < 35	.58 (60)	.44 (110)	1.84* (4)	.73 (15)	.53 (45)	1.43 (7)	.43 (21)	.90 (9)	.60 (15)	1.31 (11)	.36 (11)	-.30 (13)	.41 (63)
Work Hours > 45													

<sup>a</sup> Limited Liability vs. Sole Proprietors. <sup>b</sup> Independent Contractors vs. Sole Proprietors. <sup>c</sup> Partners vs. Sole Proprietors. n in parentheses. \*\*\*Significant @ 1%, \*\*Significant @ 5%, \*Significant @ 10%.

**TABLE 3. LOGIT ESTIMATES OF SELECTION BETWEEN INCORPORATED VERSUS UNINCORPORATED SELF-EMPLOYMENT**

<b>Independent Variable</b>	<b>Incorporated Versus Unincorporated Self-Employment</b>	
	<b>Log Odds</b>	<b>Marginal Effects</b>
Intercept	-4.37*** (1.53)	
<b>Human Capital</b>		
Education	.13** (.067)	.029** (.014)
Experience	.07** (.028)	.015** (.006)
Previous Part-Time Work	-.075 (.06)	-.016 (.013)
<b>Family Resources</b>		
Married	.63 (.552)	.13 (.10)
Husband's Health Insurance	-.817* (.451)	-.172* (.091)
<b>Work Flexibility</b>		
<i>Children At Home</i>		
Children < 6	-.25 (.485)	-.054 (.105)
Children 6 to 13	.351 (.264)	.076 (.057)
Children 14 to 18	-.04 (.33)	-.008 (.071)
Children 18+	-.276 (.192)	-.059 (.04)
<i>Nonstandard Work Hours</i>		
Work Hours < 35	-1.56** (.667)	-.275*** (.088)
Work Hours > 45	.516 (.454)	.112 (.098)
n Selection Category	51	
n Reference Category	92	
Pseudo R Square (McFadden)	.16	
***Significant @ 1%, **Significant @ 5%, *Significant @ 10%. Reference category is unincorporated self-employment.		

**TABLE 4. FOUR CATEGORY MULTINOMIAL LOGIT ESTIMATES OF SELF-EMPLOYMENT SELECTION**

Independent Variable	Incorporated <sup>a</sup> /Sole Proprietors-Partners <sup>b</sup> (1)		LLC/Sole Proprietors-Partners (2)		IC/Sole Proprietors-Partners (3)	
	Log Odds	Marginal Effects	Log Odds	Marginal Effects	Log Odds	Marginal Effects
Intercept	-5.05*** (1.70)		-7.43*** (2.80)		-2.79 (2.88)	
<b>Human Capital</b>						
Education	.177** (.076)	.035** (.017)	.214* (.121)	.008 (.007)	.084 (.136)	-.0002 (.006)
Experience	.075** (.031)	.018*** (.007)	.041 (.046)	.0009 (.003)	-.096 (.062)	-.006** (.003)
Previous Part-Time Work	-.072 (.067)	-.016 (.015)	-.088 (.117)	-.004 (.006)	.068 (.088)	.005 (.004)
<b>Family Resources</b>						
Married	.259 (.616)	.121 (.121)	-.998 (.845)	-.081 (.081)	-1.19 (1.17)	-.079 (.097)
Husband's Health Insurance	-.945* (.494)	-.025** (.102)	-1.13 (.757)	-.046 (.043)	.746 (.912)	.063 (.053)
<b>Work Flexibility</b>						
<i>Children At Home</i>						
Children < 6	.281 (.554)	.007 (.123)	1.26** (.639)	.067* (.042)	1.31* (.746)	.053 (.036)
Children 6 to 13	.639** (.321)	.117* (.069)	.629 (.435)	.019 (.025)	.957* (.499)	.031 (.024)
Children 14 to 18	.358 (.382)	.035 (.084)	1.38*** (.509)	.075** (.034)	.673 (.606)	.020 (.027)
Children 18+	-.316 (.212)	-.074 (.047)	-.612 (.392)	-.033 (.023)	.770* (.417)	.045** (.019)
<b>Nonstandard Work Hours</b>						
Work Hours < 35	-.833 (.710)	-.373*** (.101)	3.29*** (1.22)	.056*** (.193)	.092 (1.09)	-.014 (.039)
Work Hours > 45	1.08** (.506)	.133 (.110)	2.95** (1.19)	.182* (.094)	.832 (.914)	.005 (.39)
n Selection Category	51		21		11	
n Reference Category	60		60		60	
Pseudo R Square (McFadden)	.25		.25		.25	
<sup>a</sup> Merges C corporations and S corporations. <sup>b</sup> Sole proprietors and partners merged as the reference category. ***Significant @ 1%, **Significant @ 5%, *Significant @ 10%.						

TABLE A1. SIX CATEGORY MULTINOMIAL LOGIT ESTIMATES OF SELF-EMPLOYMENT SELECTION<sup>a</sup>

Independent Variable	C Corporation/ Sole Proprietor (1)		S Corporation/ Sole Proprietor (2)		LLC/ Sole Proprietor (3)		IC/ Sole Proprietor (4)		Partner/ Sole Proprietor (5)	
	Log Odds	Marginal Effects	Log Odds	Marginal Effects	Log Odds	Marginal Effects	Log Odds	Marginal Effects	Log Odds	Marginal Effects
Intercept	-5.91** (2.47)		-6.23*** (1.79)		-3.34* (2.08)		-1.67 (2.63)		-8.27** (3.85)	
<b>Human Capital</b>										
Education	.158 (.118)	.005 (.009)	.222** (.083)	.034** (.014)	.161* (.100)	.007 (.008)	.051 (.129)	-.003 (.006)	.110 (.139)	.000 (.002)
Experience	.041 (.045)	.001 (.004)	.087*** (.033)	.018*** (.006)	.010 (.040)	-.002 (.004)	-.109 (.059)	-.008 (.003)	.076 (.086)	.000 (.001)
Previous Part-Time Work	-.025 (.096)	.004 (.008)	-.062 (.080)	-.013 (.014)	-.069 (.106)	-.006 (.009)	.081 (.089)	.006 (.005)	.071 (.083)	.001 (.001)
<b>Family Resources</b>										
Married	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Husband's Health Insurance	-.971 (.667)	-.043 (.050)	-.887* (.495)	-.014 (.085)	-1.54*** (.645)	-.113** (.056)	.151 (.740)	.038 (.042)	-.029 (1.00)	.008 (.016)
<b>Work Flexibility</b>										
<i>Children At Home</i>										
Children < 6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Children 6 to 13	.324 (.503)	-.007 (.039)	.819** (.347)	.121** (.058)	.565 (.375)	.019 (.031)	.794* (.469)	.023 (.023)	1.08 (.803)	.012 (.013)
Children 14 to 18	.562 (.495)	.031 (.038)	.225 (.429)	-.005 (.077)	.804* (.416)	.065* (.038)	.341 (.573)	.006 (.029)	.595 (.921)	.006 (.015)
Children 18+	-.037 (.302)	.008 (.024)	-.305 (.240)	-.054 (.043)	-.670* (.391)	-.064** (.033)	.646* (.380)	.044** (.020)	.938* (.482)	.018 (.013)
<i>Nonstandard Work Hours</i>										
Work Hours < 35	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Work Hours > 45	2.05*** (.761)	.155** (.064)	.974* (.504)	.108 (.087)	.571 (.600)	-.001 (.052)	.657 (.760)	.004 (.037)	-1.39 (1.27)	-.035 (.025)
n Selection Category	14		37		21		11		7	
n Reference Category	53		53		53		53		53	
Pseudo R Square (McFadden)	.18		.18		.18		.18		.18	

<sup>a</sup>Excludes homogenous variables married, children < 6, work hours < 35. \*\*\*Significant @ 1%, \*\*Significant @ 5%, \*Significant @ 10%.

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## ENDNOTES

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<sup>2</sup> Preschool is measured as number of children under six years of age in all the studies. School age differed to some degree. Macpherson (1988) used number of children 6 to 13. Carr (1996) and Lombard (2001) used number of children 6 to 17. Connelly (1992) used number of children 6 to 12.

<sup>3</sup> Taniguchi (2002) suggested longitudinal analysis may contribute to this result by preventing overstatement of the influence young children have on women's entry into self-employment. Cross-section studies, Taniguchi (2002) argued, cannot determine if the birth of young children occurred before or after entry into self-employment. If young children are born after entry overstatement occurs because they may not be the cause of the transition of women into self-employment. It is also possible, however, that women may enter self-employment based on their expectation of having children in the future. In this case, longitudinal analysis—which emphasizes the presence of young children in the prior time period—would understate the effect of young children on the transition of women into self-employment.

<sup>4</sup> St. Croix County is located in western Wisconsin. The county forms a border with Minnesota and is included in the Minneapolis-St. Paul Metropolitan Statistical Area. In 2004 (the time of data collection),

St. Croix County had the highest population-growth rate in the state of Wisconsin and ranked tenth in per capita income (Wisconsin Department of Workforce Development, 2011).

<sup>5</sup> Reference USA provides information that includes the firm's contact person, title of contact person, and a phone number. In the list generated for St. Croix County most cases indicated "owner" under title of contact person. This designation identified the firm as self-employed. Some cases, however, were ambiguous because the title of the contact person indicated "manager" or was blank. In these instances, firms were contacted by phone to determine if they should be categorized as self-employed. Self-employment status was also determined using the web page of the Wisconsin Department of Financial Institutions ([www.wdfi.org](http://www.wdfi.org)), which provides information on owners of incorporated self-employed in the state. An additional problem involved identification of real estate agents and financial representatives (categorized as independent contractors). The Reference USA directory indicates the company and only one agent as the contact person. The web page of each company allowed identification of the remaining agents.

<sup>6</sup> To maximize the response rate six tickets to the Minnesota Vikings-Green Bay Packers football game (which took place December 24, 2004 in Minneapolis) were purchased. The cover letter informed respondents that returning a completed survey would make them eligible to win a pair of the tickets in a random drawing. The response rate of over 40 percent, which is high for surveys of small businesses, suggests this was an effective tool.

<sup>7</sup> Disadvantages of incorporation include higher start-up, operating, and tax costs. In addition, incorporation involves more paperwork due to federal, state, and local regulations (SBA, 2010). These disadvantages are also consistent with less flexibility and a stronger commitment to work.

<sup>8</sup> Lowrey (2005) indicates sole proprietors are the predominant form in all self-employment, particularly among women.

<sup>9</sup> DeBaise (2009) indicates management structures in limited liability companies tends to be less formal compared to incorporated self-employment, which suggests greater flexibility.

<sup>10</sup> C corporations pay corporate taxes on net income. Double taxation occurs if net income is distributed as dividends to shareholders who then pay income tax. If net income is kept within the company and used for capital expansion only the corporate tax rate is paid. S corporation status allows owners to take net income as dividends which are not subject to corporate or payroll taxes (DeBaise, 2009). This may reduce the incentive for capital investment. Lowrey (2005) indicates higher average receipts for C corporations (\$1,166,000) compared to S corporations (\$814,000) suggesting larger operations.

<sup>11</sup> As indicated above, since the analysis employs cross-section data, it cannot be established if the birth of children occurs before or after entry of women into a particular sector. As a result, H1 through H4 assume the number of children measured at the time of the survey reflects the child-bearing expectations of women, which influenced their self-employment decision. It cannot be ruled out, however, that the coefficients may overstate the role of children in self-employment selection. This would be the case if children occur after entry into a self-employment sector and do not reflect the expectations of women regarding their family plans.

<sup>12</sup> Work below 40 hours per week indicates greater flexibility because more time is available to self-employed women to carry out household responsibilities. Since there is less time available for housework if work hours exceed 40 this suggests less flexibility. Another aspect of flexibility implied in the literature is that self-employed women, compared to the wage and salary sector, have greater control over when and where the work gets done. The work hours measure, as well as number of children, is not able to directly capture this other important aspect of work flexibility.

<sup>13</sup> C corporations and S corporations are merged, as is the case in the binomial logit, due to their similarity as a result of incorporation. Within unincorporated self-employment partners and sole proprietors have the lowest average net income (\$35,000 and \$23,734) compared to independent contractors (\$42,467) and limited liability companies (\$43,500). This suggests possible similarity between partners and sole proprietors due to smaller operations. In addition, as indicated in Table 2, partners are the smallest category (n=11) in the unincorporated sector and sole proprietors the largest (n=63). Combining these

two, then, should allow less distortion of results. Also, it should be noted, the analysis now assumes H1 through H6 hold when comparing the merged category sole proprietors-partners to the incorporated sector.

<sup>14</sup> The differences in mean values for work hours under 35 and work hours over 45, between the incorporated and unincorporated sectors, are significant at 5 percent. Incorporated self-employed women also have significantly higher average earnings (\$51,026) compared to sole proprietors-partners (\$25,123). This is consistent with a stronger commitment by incorporated self-employed women to their firms. It also suggests women in the incorporated sector may be able to afford some degree of day-care services to extend the working day.

<sup>15</sup> The results indicating positive effects for both *children 14 to 18* and *work hours over 45* suggests a possible interaction where older children helping out allows women in limited liability companies to work long hours. An additional four category multinomial logit was estimated that included the interaction term (children 14–18) × (work hours over 45). The log of odds and mean square coefficients were not significant.

<sup>16</sup> As indicated above, average income for independent contractors in this sample is relatively high at \$42,467. It is plausible that these women could also rely (to some degree) on childcare services.

<sup>17</sup> Table 4 (Model (3)) indicates insignificant marginal effects for children under 6 and 6 to 13 where the log of odds coefficients for these variables are significant. Again, the differences in significance probably reflect error associated with the small sample. The insignificant marginal effects, however, could also be due to the lower mean value for experience among independent contractors compared to sole proprietors and partners (see Table 2). It is possible that more experience among sole proprietors and partners reflects higher sunk costs. As a result, if sole proprietors and contractors have more young children the higher sunk costs would discourage their selection into independent contracting even though they may find jobs that allow more flexibility.

<sup>18</sup> The insignificance of the work hours over 45 coefficients (which were significant in the analysis of selection into limited liability companies in Table 4) may also reflect sensitivity to the exclusion of the homogeneous variables.

**OPTIMAL MONETARY POLICY:  
A CASE FOR PRICE-LEVEL TARGETING**

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**ABSTRACT**

Over the last fifteen years, central banks around the world have been adopting inflation-targeting monetary policies. The goal of this paper is to examine the effectiveness of this approach when compared to a price-level target. To do so, I use a simple Dynamic New-Keynesian model and compare welfare losses under each policy. I find that under all circumstances, price-level targeting has the highest socially preferable outcomes.

## I. INTRODUCTION

In recent years, the general trend of modern central banks has been to adopt inflation-level targeting, starting with Reserve Bank of New Zealand in 1990, and the Banks of Canada and England in 1991 and 1992 respectively. Today, the central banks in 55 countries follow an explicit inflation target.<sup>2</sup> The United States is believed to have an implicit inflation target, although the Federal Reserve is not formally an inflation targeter. Inflation targeting as a policy is the practice of adjusting policy instruments, usually the short term nominal interest rate, in order to meet a predetermined inflation rate target over a certain time period. As Batini and Yates (2003) point out, given the number of central banks following this policy, there is clearly an aggregate perception that some sort of price stability is beneficial. One of the mandates of the US Federal Reserve Act even requires that ‘stable prices’ be pursued, although it gives no indication what exactly ‘stable prices’ means.

Although the opinion of modern central banks is that controlling inflation is the best way to produce stable prices, there has been recent academic debate that targeting the price level would be a better answer.<sup>3</sup> Price-level targeting is similar to inflation targeting with one key difference: while inflation targeting looks to meet a pre-announced level of inflation, or a *change* in the price level over time, price-level targeting attempts to meet a pre-announced *price level* over time. The difference may seem small, but there are large potential consequences to such a switch. While, by definition, inflation targeting aims to control and stabilize inflation rates over time, this in no way helps protect future prices from base level drift. The current support for inflation targeting (or argument against price-level targeting, I suppose) is that price-level targeting would lead to greater volatility in inflation, employment, and output over time. This is because, under price-level targeting, by construction, every positive increase in inflation would be corrected with a matching decrease, and vice-versa. However, as Svensson (1999) showed, price-level targeting could potentially lead to *more* stability in employment and output and, even more interestingly, in inflation as well.

In this paper, I look at a simple model economy under both inflation and price-level targeting policies and compare the two. To do this, I use a simple welfare loss function to determine the potential consequences of each policy, as well as to introduce a preference for a stable price level.

My results show that price-level targeting in a mostly forward looking, discretionary regime will bring about significantly lower welfare loss than inflation targeting when using normal welfare rules, and the gap between the two will increase as a social preference for a stable price level is introduced and increased.

The remainder of the paper is organized as follows: Section II gives a brief summary behind inflation and price-level targeting as well as a comparison of the two. Section III explains the model and parameters used and Section IV discusses the results. Section V concludes.

## II. INFLATION TARGETING VS. PRICE-LEVEL TARGETING

**Inflation targeting (IT)** has been the ongoing trend for the last fifteen years or so because it works. It does help control volatility in inflation as well as output. The logic behind this method is simple: as inflation trends away from the targeted rate, the central bank uses policy to bring it back to the ideal level. Looking at a simple log-linearized IT Taylor rule we can see the relationship between policy, inflation, and output (Taylor 1993):

$$r_t = E_t \pi_{t+1} + \gamma_p \pi_t + \gamma_y y_t$$

where  $r_t$  denotes the short-term nominal interest rate,  $\pi_t$  is the log of inflation,  $y_t$  is the log of the output gap,  $E_t$  is an expectation operator, and  $\gamma_p$  and  $\gamma_y$  are the weights on deviations of inflation and the output gap from their steady states. This Taylor rule assumes that the central bank sets nominal interest rates so that the short-term real rate ( $r_t - E_t \pi_{t+1}$ ) responds to deviations in price/inflation and the output gap.<sup>4</sup>

As can be seen, a shift away from targeted inflation will also shift the policy rule with it in order to bring the deviation of inflation from its target back to zero as quickly as possible. While this does potentially cause as little volatility in inflation as possible, it does nothing to stabilize medium- to long-term inflation, and so the price level is permanently affected.

**Price-level targeting (PT)** is a shift in policy toward stabilization of these medium- to long- term averages, which would keep inflation *and* the price level steady over those periods. Looking at a simple log-linearized PT Taylor rule we can see this policy:

$$r_t = E_t\pi_{t+1} + \gamma_p p_t + \gamma_y y_t$$

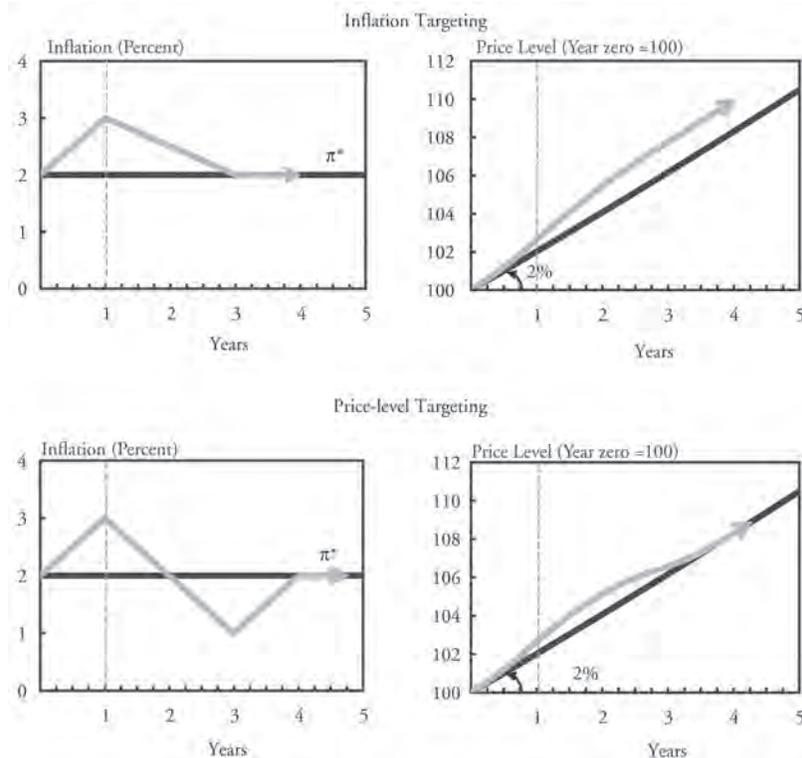
where  $p_t$  represents the log of the consumer price index and  $\gamma_p$  is the weight on a deviation of the price level from its target, with the other variables remaining unchanged from the previous equation.

Here, as with an inflation target, the policy tool reacts to shifts in the price level by bringing prices back to steady state, or the desired level. As shown by Svensson (1999), in order to do this inflation will have to be adjusted accordingly. Looking at:

$$p_t = p_{t-1} + \pi_t \tag{1}$$

inflation must shift opposite of a change in the lagged price level ( $p_{t-1}$ ) in order to keep the deviation of the current price level ( $p_t$ ) from the target path at zero. George Kahn (2009) gives a good illustration of both the IT and PT mechanisms:

**CHART 1. INFLATION VS. PRICE-LEVEL TARGETING (Kahn, 2009)**



Here, under IT an unexpected increase in inflation will be met with tightening of the nominal interest rate until the desired inflation target is hit. However, this will cause the price level to shift permanently upwards, affecting all future prices. Under PT, the central bank would push inflation down to its target and then temporarily *below* its target in order to offset the period of above-average inflation. This will bring both inflation and the price level back to their original steady states.

### III. THE MODEL

In order to examine the above scenarios, I need a model of the economy.<sup>5</sup> As the main theme of this paper is the potential benefits of a PT policy rule as opposed to an IT one, a simple policy instrument rule is required that can easily shift depending on which policy I am testing.

By incorporating (1) into the IT Taylor rule, we find:

$$r_t = E_t \pi_{t+1} + \gamma_p (p_t - p_{t-1}) + \gamma_y y_t$$

and by adding the parameter  $\eta$  to the lagged price level à la Batini and Yates (2003), and taking the first difference of the output gap as in Woodford (2003), I have a generalized Taylor rule:

$$r_t = E_t \pi_{t+1} + \gamma_p (p_t - \eta p_{t-1}) + \gamma_y (y_t - y_{t-1}) \quad (2)$$

where  $\eta \in [0,1]$  and  $y_{t-1}$  represents the (log of) lagged output gap, with the other variables unchanged. I can now switch the model between IT and PT at will, as  $\eta = 1$  corresponds to an IT Taylor rule, and  $\eta = 0$  is a PT Taylor rule. Batini and Yates (2003) used this form to test hybrid versions of the rule, or situations where  $0 < \eta < 1$ , but for my model it simply allows for an easy method of moving between IT and PT. The other parameters,  $\gamma_p$  and  $\gamma_y$ , are each set to 0.5 in the baseline model, meaning policymakers respond to deviations from output and inflation equally.

The rest of the model can be expressed by two structural equations. The first is the (log-linearized) IS

$$y_t = \rho_y y_{t-1} + \tau_y E_t y_{t+1} - \sigma (r_{t-1} - E_{t-1} \pi_t) + \varepsilon_{IS} \quad (3)$$

where  $\rho_y$  and  $\tau_y$  represent the persistence coefficient of output and the weight of expected future output respectively,  $\sigma$  is the elasticity of intertemporal substitution, and  $\varepsilon_{IS}$  is a demand shock assumed to be white noise. Here, output depends positively on itself (past and expected future values) as well negatively on changes in policy, represented here by the real interest rate. This IS curve is partially backward-looking, where  $\rho_y = 0.25$  and  $\tau_y = 0.75$ , and  $\sigma$  is set equal to 0.1.

The (log-linearized) Phillips curve is given by:

$$\pi_t = \rho_\pi \pi_{t-1} + \tau_\pi E_t \pi_{t+1} + \kappa (y_t + y_{t-1}) + \varepsilon_\pi \quad (4)$$

where  $\rho_\pi$  represents the persistence coefficient of inflation,  $\tau_\pi$  is the weight of expected future inflation,  $\kappa$  is the slope of the Phillips curve, and  $\varepsilon_\pi$  is a supply shock assumed to be white noise. Like with output in (3), inflation depends positively on the lag and expected value of inflation, as well as output deviation. As with the IS curve, the Phillips curve is partially backward-looking, with  $\rho_\pi = 0.25$  and  $\tau_\pi = 0.75$ , and  $\kappa = 0.1$ .

The last equation added to the model is a welfare loss function. This is where I diverge from Batini and Yates' (2003) work, as they measure only the variance changes between the two policies, without incorporating welfare losses into their model. My goal is to determine how these policies affect society, and to do so I use a very simplistic version of the welfare loss function found in Galí (2008, Chapter 4):

$$\omega = \pi_t^2 + \lambda_y y_t^2 + \lambda_r r_t^2 + \lambda_p p_t^2 \quad (5)$$

where welfare loss ( $\omega$ ) depends on the deviations of these four variables from their steady states, each weighted by their corresponding  $\lambda$ s relative to inflation. This deviates from Galí's (2008) work in that I added both interest rate and price-level variables to the equation, assuming that society has at least some desire to keep these two rates constant. The intuition is fairly simple: as each of these variables shifts away from their steady states of zero, welfare losses, expressed in terms of the equivalent permanent consumption decline,<sup>6</sup> correspondingly increase with the shifts. The parameterization of the parameters are taken from Gerberding et al. (2010) and set to  $\lambda_y = 0.0156$  and  $\lambda_r = 0.077$ , with  $\lambda_p$  set to zero in the baseline model. The intuition behind these values is that, while the central bank loses welfare as any of

these variables shift away from steady state, they care most about shifts in inflation and therefore weight variations in it much heavier than the others. I will then look at a variety of values for  $\lambda_p > 0$  to see what changes a preference for stable prices has on welfare losses.

#### IV. RESULTS

When running the model, I look at the impulse responses after a positive, i.i.d. shock to the IS curve, or a sudden increase in demand. The responses to the endogenous variables over time can be seen in Figure 1. As expected, I get a situation similar to that in Chart 1. In this baseline model, a shock to demand increases output, which is countered by increased interest rates under both policies. These higher interest rates will then push inflation and output back towards their steady states. Under PT, however, rates will also be temporarily below steady state before normalizing, bringing the price level back down to steady state.

An interesting feature of this graph is the response of inflation to the output shock for the IT and PT policies. Under PT, the inflation response is significantly lower than under IT. Here expectations play a large role in regards to inflation. The market, anticipating the correction that will be made by the price-level targeting central bank, will reduce investment and spending faster than under inflation targeting. Expected inflation will therefore be lower under PT, reflecting the expectation that federal funds rates will have to be increased in order to offset this disturbance.

The truly interesting feature of these results is that, because of the lower inflation anticipated with a PT central bank,<sup>7</sup> the market helps correct the shock *by itself*. With the corresponding decrease in spending and investment caused by the expected lower inflation, the federal funds rate has to increase, or vary, less than with an inflation-targeting system!

This implies a powerful consequence to price-level targeting. A central bank committing to this policy will inherently receive this built-in response to help combat shocks to demand, which in turn will require less variability in the federal funds rate. The benefit of this, other than any welfare loss saved, is that the chances of hitting the zero bound are greatly decreased, which is paramount during a recession or depression.

**FIGURE 1. RESPONSE TO A POSITIVE DEMAND SHOCK**

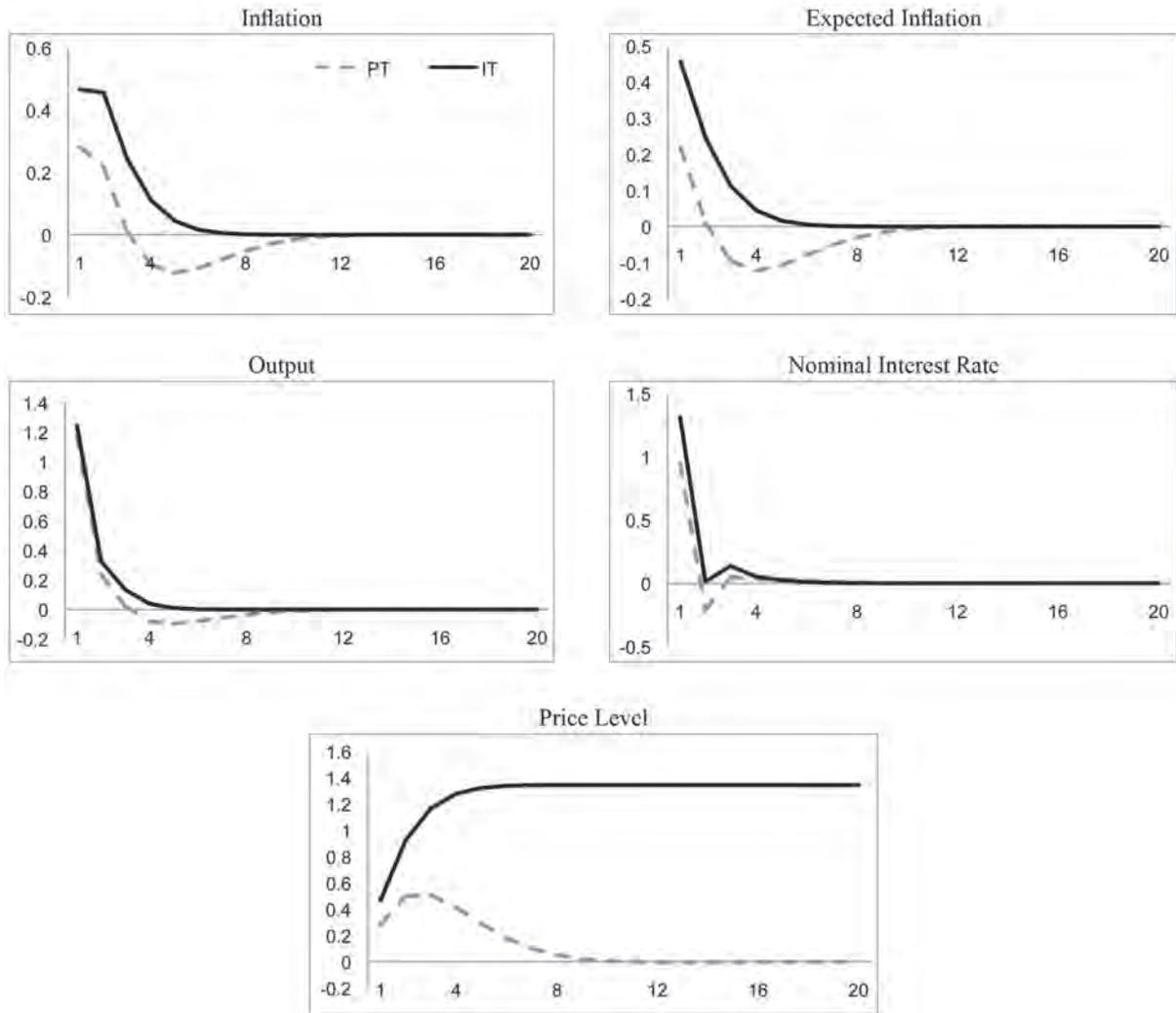
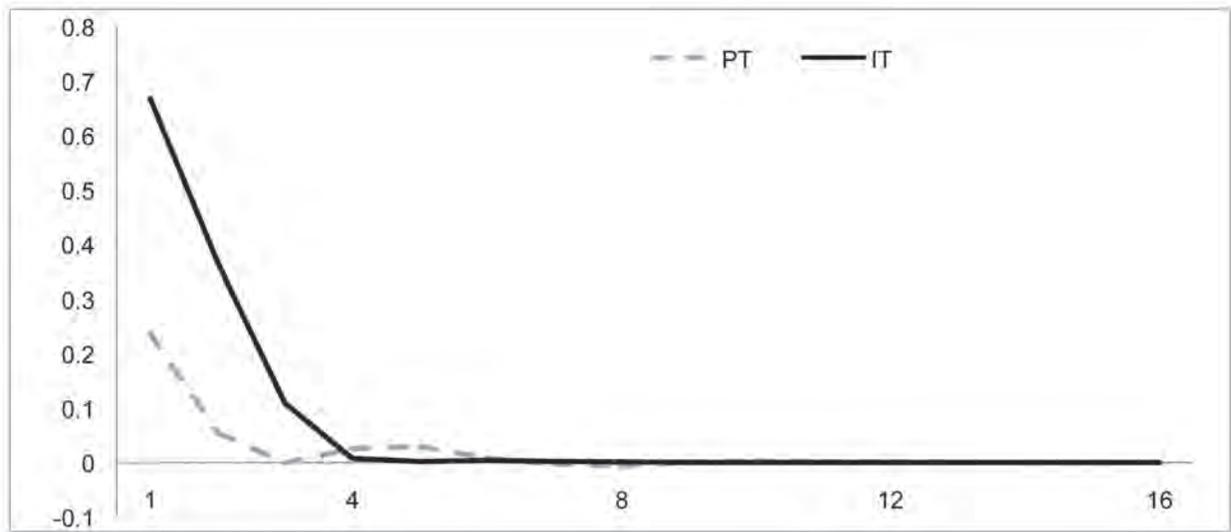


Figure 2 presents the welfare losses over time to the IT and PT policies under the baseline parameters. Already, welfare losses for the price-level targeting policy seem to be substantially less than under inflation targeting, as the solid line (IT) is almost always greater than the dashed line (PT). This can be explained by the relatively high weight placed on inflation variability in equation (5). When looking at the response to inflation in Figure 1, it is easy to see the greater variability under IT, which in turn leads to higher welfare losses.

**FIGURE 2. COMPARISON OF WELFARE LOSSES IN BASELINE MODEL**



It is not so hard to image, therefore, that any preference greater than zero for a stable price level will only compound this effect. Figure 3 shows the welfare losses when  $\lambda_p = 0.01$  and  $\lambda_p = 0.05$ . Due to the permanently increased price level after the demand shock (seen in the price-level response in Figure 1), any weight placed on  $p_t$  in (5) will cause welfare losses to increase for inflation-targeting central banks.<sup>8</sup>

**FIGURE 3. COMPARISON OF WELFARE LOSSES WITH A STABLE PRICE LEVEL PREFERENCE**

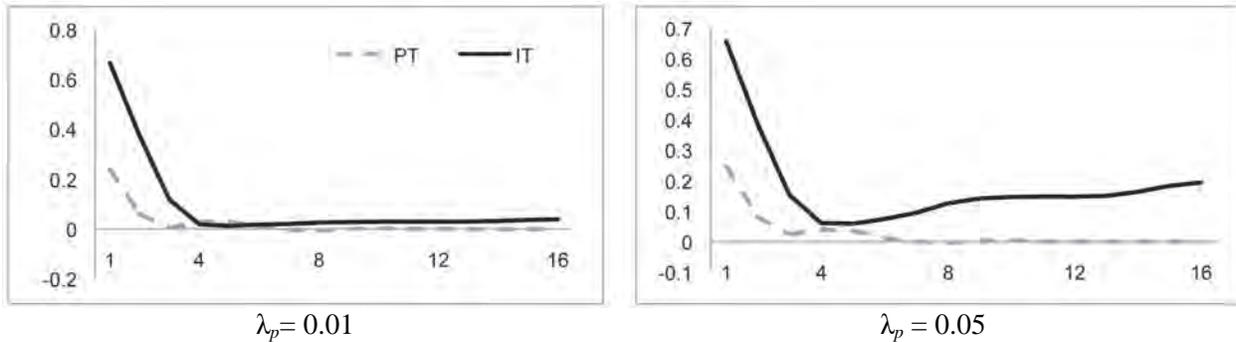


Table 1 shows the calculated welfare loss for each policy as  $\lambda_p$  increases.<sup>9</sup> Clearly, price-level targeting is superior under any positive value of  $\lambda_p$ , which implies that, under this model's assumptions, there would be no circumstance in which inflation targeting would be the preferred policy. This just further confirms the outcome reached by studying Figures 1 and 2.

**TABLE 1. WELFARE LOSS**

	Relative Welfare Loss			
	at $\lambda_p=0$	at $\lambda_p=0.01$	at $\lambda_p=0.05$	at $\lambda_p=0.5$
IT	0.759	0.765	0.789	1.053
PT	0.279	0.289	0.329	0.786

In order to fully compare the two models, I look at welfare losses using these four values of  $\lambda_p$  while also using variations in the Taylor rule weight parameters,  $\gamma_p$  and  $\gamma_y$ . These results are displayed in Table 2. Again, losses are always minimized under PT policy.

**TABLE 2. WELFARE LOSS COMPARISON WITH DIFFERENT TAYLOR PARAMETERS**

	Taylor Rule									
	Inflation Targeting					Price Level Targeting				
	$\gamma_p$	$\gamma_y$	$\gamma_p$	$\gamma_y$	$\gamma_p$	$\gamma_y$	$\gamma_p$	$\gamma_y$	$\gamma_p$	$\gamma_y$
	0.5	1.5	1.5	10	1	0.5	1.5	1.5	10	1
	0.5	0.5	0	0.5	5	0.5	0.5	0	0.5	5
$\lambda_p=0$	0.759	0.567	0.433	0.739	4.461	0.279	0.214	0.165	0.424	2.573
$\lambda_p=0.01$	0.765	0.571	0.436	0.740	4.477	0.289	0.218	0.169	0.425	2.592
$\lambda_p=0.05$	0.789	0.585	0.449	0.743	4.543	0.329	0.234	0.183	0.427	2.667
$\lambda_p=0.5$	1.053	0.741	0.584	0.774	5.278	0.786	0.410	0.339	0.451	3.510

The lowest welfare costs occur with price-level targeting and setting  $\gamma_y$  to zero. This suggests that, when responding to a demand shock, it is better to respond solely to changes in inflation. This result can be explained once again by the relatively large weight given to inflation deviations in the welfare loss function (5).

**V. CONCLUSION**

The relatively recent trend of adopting inflation targets by central banks suggests that there is a clear desire for stable prices, and that inflation targeting does in fact lead to more stable prices. However, the United States and countries all over the world are still experiencing recessions and are often close to the zero nominal interest rate lower bound; thus, a new and better policy is desired.

The emerging literature on targeting price levels has been widely unheeded by many central bankers due to the perceived increases in volatility it would bring, as well as the fear of implementing untested policy. As this paper, along with many before it, hope to show, price-level targeting has the potential to decrease output, interest rate, and inflation volatility more than inflation targeting. Additionally, price-level

targeting would, by definition, bring about a stable price level, something that is not possible when targeting inflation. Along with these benefits, the introduction of the expected inflation policy instrument would be another invaluable consequence to price-level targeting policy, one that the Federal Reserve is attempting to use today with mixed results.<sup>10</sup>

This paper looks to contribute to the growing literature advocating price-level targeting, but it should be made clear that these potential benefits are just that: *potential* benefits. The benefits contrived in this paper stem from a very precise, assumption-heavy model. Nevertheless, the results of this paper, as well as many like it, point more and more towards price-level targeting as the next logical step for central bankers.

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### ENDNOTES

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<sup>2</sup> As seen in the Julius et al. (1999) survey.

<sup>3</sup> See Svensson (1999), Batini and Yates (2003), Vestin (2006), Gaspar et al. (2007), Amino and Ambler (2008), Kahn (2009), Gerberding et al. (2010).

<sup>4</sup> As in Batini and Yates (2003).

<sup>5</sup> This model is based heavily on the one used in Batini and Yates (2003), with a few deviations, the largest being that this model captures a closed economy, as opposed to one incorporating an exchange rate.

<sup>6</sup> Measured as a fraction of steady state consumption, as in Gali (2008).

<sup>7</sup> Meaning the expected increase in the fed funds rate under PT is greater than with IT.

<sup>8</sup> Looking at Figure 3, the permanent increase in welfare losses for the two was expected, but the increasing nature of them was not. I do not feel that this nullifies my results in any way, but I cannot explain why the losses do not level off after time. Any assistance on this matter would be appreciated.

<sup>9</sup> Under the baseline parameters.

<sup>10</sup> The Fed recently announced that it would hold interest rates effectively at zero until 2014, hoping to create a spark in investment, and through it output. However, the Board of Governors are perceived to be (mostly discretionary) inflation targeters, which makes investors nervous, as they do not know if the FOMC will stick to their word once inflation starts to increase. This would not be a concern for a price-level targeting central bank.

**RECONCILING STUDENT PREFERENCES FOR TARIFFS:  
CLASSROOM APPLICATION OF MORAL SYSTEMS  
TO GOVERNMENT INTERVENTION**

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**ABSTRACT**

Introductory economics instructors often emphasize application of technical analytical tools and tend to ignore the tools needed to analyze ethical issues arising in principles courses. This paper argues that it is appropriate and useful for the instructor to present competing ethical systems in principles-level economics courses to establish the foundational knowledge essential for students to engage economic policy that might deviate from the inherent preference of the student. By familiarizing students with deontological and consequentialist ethical systems, students are prepared to address their inherent discomfort associated with various economic policies and thus students are better equipped to appreciate and learn the principles of economics.

## I. INTRODUCTION

Scholars identify the final year of mercantilism as a school of economic thought with publication of *Inquiry into the Nature and Causes of the Wealth of Nations* by Adam Smith (Brue 2007). Smith's (1991) systematic dismantling of mercantilist ideas and policy delegitimized mercantilism as a viable economic system. Nonetheless mercantilism persists and preferences for mercantilist policy permeate the general population as well as students enrolled in introductory economics. This paper posits that the persistence of mercantilism represents a teaching opportunity that can be extended to other examples of government intervention. Specifically, I assert that the presentation of competing moral systems can facilitate discussion and greater understanding of government intervention and the subsequent economic consequences.

Introductory economics textbooks acknowledge that economists frequently disagree. To explain why economists disagree, textbook authors distinguish between normative and positive economics. The discussion receives limited treatment, given the introductory purpose of the text. Informal review of economics texts reveals that some authors note that competing values can help to explain differing policy positions. Despite the acknowledgement of differing positions based on competing values, even these introductory level texts seldom incorporate competing perspectives in the subsequent pages and, thereby, expose the economics teaching profession to challenges of proselytizing. Perhaps the most compelling example of this accusation is associated with the presentation of the benefits associated with specialization based on comparative advantage and the subsequent trade between countries.

Conventional introduction to undergraduate students of the benefits of international trade relies upon demonstrating that society gains social welfare, that is to say, the sum of consumer and producer surplus under the conditions of free trade exceeds the sum of consumer and producer surplus under less free conditions for trade.<sup>2</sup> An instructor visually presents the benefits of trade by demonstrating graphically the net gain in social welfare, due primarily to an expansion of the market. The graphical presentation lends itself ideally to a tabular summation of net gains to society, whether the nation imports or exports at the prevailing world price. Despite the compelling elegance of the presentation, some students remain unwilling or unable to accept the conclusion that free trade is good public policy. The remainder of this paper examines this puzzling phenomenon. Why do the benefits of trade resonate so loudly among economists yet ring hollow among so many students? More importantly, as instructors, how might we engage this phenomenon in the classroom?

According to Bryan Caplan (2007), the aforementioned students are a subgroup of a broader segment of the population that is quite simply wrong.<sup>3</sup> Caplan distinguishes who is right and who is wrong based upon who agrees with the position of economists, who are, of course, the experts on the subject. The conventional introduction of the benefits of international trade and the position of Caplan are reflective of a teleological ethical system, in which right and wrong or good and bad are determined based on consequences. In contrast, deontological ethical systems rely upon rules to determine right and wrong without consideration of consequences. This paper argues that the conventional introduction to the benefits of international trade embodies a teleological ethical system and, perhaps too often but certainly not always, fails to recognize that some students are likely to impose a deontological ethical system. Recognizing the distinction presents a teaching opportunity to review competing ethical systems often neglected when teaching economics. The remainder of this paper briefly reviews competing ethical systems prior to applying the ethical systems to the topic of free trade. I have elected to focus on the topic of free trade because it is not only a controversial topic in the classroom but a provocative social and political issue that generates numerous examples in the popular press, which may be useful when presenting the topic in class. Concluding remarks complete the paper.

## II. ETHICS THEORIES

For the purpose of this paper, two traditions of ethics are introduced. Teleological ethical systems assess the morality of an act based on the consequences. As such, the statement, “the ends justify the means” presupposes a teleological ethical system. Utilitarianism is a prominent teleological ethical system that advocates “the greatest good for the greatest number”; thus morality is assessed based on consequences. Utilitarianism was popular among philosophers of the Enlightenment because utilitarianism did not refer to an authority—specifically, the church—for determination of good and bad (Hartman 2002). Adam Smith’s compelling argument in favor of free trade presented in *Wealth of Nations* is indicative of utilitarianism. Jeremy Bentham (1823) and John Stuart Mill (2011) later extend and formalize utilitarianism. To this day economists apply a utilitarian ethic when evaluating economic policy.

Despite broad application of utilitarianism, inherent problems plague it as a moral system (Posner 1981, Hartman and Desjardins 2008). Utilitarianism determines the morality of an action based on the outcome, which suggests that outcomes can be quantified and compared. For example, determination of the greatest good for the greatest number implies we can measure happiness. Even if happiness can be quantified, whose happiness is included? How do we assess the happiness of those indirectly affected? What discount rate is applied to the happiness of future generations? More debilitating than measurement issues is the moral contradiction suggested by the idea that ends justify means. Indeed, among the earliest ethical principles of western civilization is that ends indeed do not justify means. The classic illustration of this point is slavery. If it could be demonstrated that enslaving a portion of the population resulted in a utilitarianism would have to support the decision to abandon efforts to rescue a child, if it could be demonstrated that the resources could do more good for society if allocated elsewhere, perhaps repairing roads or financing a sports arena. Finally, a parent would have to deny basic necessities to an ailing child, if the expected benefits accruing to the surviving children can be shown to exceed the benefit to the feeble sibling.

In contrast to teleological ethical systems based on assessment of outcomes, deontological ethical systems rely upon rules to assess morality. Religion offers clear rules of behavior based on religious beliefs, such as the Ten Commandments from the Judeo-Christian tradition. Alternatively, virtue ethics can be traced back to Aristotle and his emphasis on character traits such as generosity, honesty, and courage (Mintz 1996). In contrast, Confucius produced a litany of specific rules regarding how to live. However, the most comprehensive ethical system reliant upon rules is attributed to Immanuel Kant, who argued that morality is tied to performance of one’s obligations, duty, to others. Kant (1993) proposes the *Categorical Imperative* to assess the morality of an action. According to Kant, an individual should act only on principles that he or she would impose upon all of mankind. Reminding a child not to hit another child is an example of application of the categorical imperative. This example reflects that it is categorically wrong to hit another person. If individuals act based upon their categorical imperative, certain universal rights can be identified, including respect, autonomy, human dignity, freedom of speech, and a right to privacy. Kant contends that people are to be treated as ends, not as means, and that others should be recognized as subjects rather than as objects. Accordingly, using others for personal gain violates the Kantian ethical system because others are denied dignity and autonomy and used as a means to another’s ends.

## III. ECONOMICS AND ETHICS EDUCATION

Undergraduate students are seldom required to take an ethics course in college. Undergraduate business students, however, are likely required to complete a course in business ethics as part of a core curriculum. The course may or may not precede enrollment in an economics course. Accordingly, an economics course may very well be a student’s first or only exposure to ethics in an academic context, which raises an important question regarding whether or not an economics class is an appropriate venue for the

introduction of ethics. I have no definitive answer for the reader but I offer some observations for consideration.

An argument against teaching ethics in an economics class is rooted in the very topic that serves as illustration for this paper, the benefits of specialization and trade. One might declare that students enroll in economics courses to learn economics and enroll in ethics courses to learn ethics. Any effort to attempt to do both necessarily results in suboptimal instruction of both economics and ethics. One might assert that economists are ill-equipped to teach ethics and should yield to philosophers trained to do so. I find both positions unsatisfying. In the first instance, ethical considerations cannot be disentangled from introductory economics courses. In addition to international free trade, ethical considerations are fundamental to the other topics covered: price floors, price ceilings, externalities, common resources, public goods, taxation, inequality, and the implications associated with fiscal and monetary policy. Indeed for many students, the ethical considerations of a policy prescription are the more interesting component of the analysis and offer insight into the economic analysis.

With respect to the more compelling second question, modern economists are not trained philosophers. Nonetheless, the discipline of economics emerged from moral philosophy and continues to attract individuals fundamentally motivated to understand social phenomena and to offer useful normative analysis to social challenges. Adam Smith wrote *An Inquiry into the Nature and Causes of the Wealth of Nations* after holding the chair of moral philosophy at the University of Glasgow. Jeremy Bentham and John Stuart Mill are revered contributors to the western tradition of political philosophy.<sup>4</sup> Karl Marx, a trained philosopher, dedicated his professional career to social change and the promotion of justice. More recently, it is difficult to challenge the significant contributions to philosophy of Keynes, Hayek, Mises, Freidman, and, most recently, Sen. This brief listing is intended to suggest that trained philosophers played an instrumental part in the founding of political economy and defining economics. Ultimately, however, justification for teaching ethics in economics courses rests on two arguments. First, few undergraduate students take a course in ethics so introduction of ethics elsewhere in the curriculum represents a net gain in awareness and instruction, whether the instruction occurs in economics, sociology, or physics courses. Second, economics is the most influential academic discipline in the formulation and assessment of public policy so it would seem essential that practitioners of economic science must demonstrate a thorough understanding and appreciation of moral issues surrounding policy recommendations.

#### **IV. FREE TRADE: ECONOMISTS V. THE PUBLIC**

Disagreement among economists is legendary, yet the one topic economists nearly universally agree upon is the benefits of free trade. Daniel B. Klein and Charlotta Stern (2007) review thirty years of survey results of the policy views of economists and find “economists oppose protectionism, but otherwise there has been no sign of any preponderant support for free-market principles.” (312) Klein and Stern analyze survey results of 264 members of the American Economic Association to find opposition to tariffs is exceptional among the eighteen public policy questions on the level of agreement among Democrat and Republican voters. Reflective of economists’ commitment to free trade Robert McTeer (2001) writes:

No policy has failed as often, or been as widely applied and enthusiastically believed, as economic protectionism. Mercantilism has dominated the thinking of the majority of the world’s peoples and, therefore, most of their political leaders. In spite of masterful dissections and refutations of mercantilism by Adam Smith, David Ricardo and Frédéric Bastiat, the protectionist dogma remains powerfully alluring for tens of millions of people around the world.

Cletus C. Coughlin (2002) presents survey results confirming the nearly universal support for free trade among economists as well as survey results demonstrating acceptance of protectionism throughout the general public. He reports that a 1999 survey conducted by the Chicago Council on Foreign Relations

found that only 32 percent of the general public favored elimination of tariffs while 49 percent of respondents considered tariffs necessary to protect jobs. Coughlin cites additional surveys providing evidence of the general public's sympathy for various protectionist policies. William Poole (2004) notes that the general population understands the benefits of trade yet maintains reservations primarily associated with distributional effects. Poole cites a 1999 Gallup poll that finds that 56 percent of respondents believe that free trade benefits firms but only 35 percent agree that trade benefits workers. In short, economists oppose trade intervention; however, the general public and politicians tend to view free trade less favorably.<sup>5</sup> The obvious hypothesis is that economists know something that is shielded from the general population.

Caplan (2007) assesses potential explanatory variables to explain the disparity in opinion between economists and non-economists. He asserts that education is the primary explanatory variable between economists and non-economists. Indeed, Caplan challenges teaching economists to advance support of various economic truths including the benefits of free trade. Using survey data from the General Social Survey, Caplan and Miller (2010) find that education explains much less of the difference between economists and non-economists after controlling for intelligence. I find Caplan's commitment inspiring but I fear that his zeal is misplaced.

## **V. ETHICAL SYSTEMS AND FREE TRADE**

For most of the past decade I have taught in a Midwestern state that has experienced extensive job loss in the manufacturing sector. It is not at all uncommon for students enrolled in introductory economics courses to know someone who has lost their job due to a plant closing. In this environment there is an inherent distrust of free trade policies and sympathy for protectionist policies among some students. Prior to arriving in the Midwest, I taught for a few years on the west coast at various colleges near Los Angeles. The innate animosity toward free trade policies seemed to exist to a lesser degree in Los Angeles than in the Midwest. The geographic distinction matters because the experiment controls for education, as all students were taking the same introductory economics course. Of course, geography is only a proxy for many other differences, such as the structure of the regional economy and unique, experience of students. The aim of this paper, however, is to discuss how instructors might engage challenges to free trade policy regardless of the unique circumstances of students.

It might seem that Bryan Caplan is on the right side of this argument and that economists need to advance understanding of the benefits of trade. Be that as it may, the conventional introduction to the benefits of trade accomplishes what Caplan desires. What I am proposing is an approach to engage students for whom the conventional method remains less than compelling. In so doing, I think that I am enhancing the student's understanding of economics more generally and the trade topic specifically.

The essence of my position is that the level of analysis differs when arguing in favor of free trade or against free trade. For Adam Smith and David Ricardo the unit of analysis is the state. They assess the benefits to the society overall when free trade reigns, rather than mercantilism or even autarky. However, seemingly with a sense of disappointment, Smith writes that he fears, despite gains to society overall associated with laissez-faire policies, he sees no relief for workers, who he anticipates will forever be relegated to a state of subsistence as natural population growth offsets the gains in national wealth. Suddenly, Smith shifts gears and is no longer examining the impact on the state but rather he is lamenting the (lack of positive) impact on individual workers. How can the lamentations of Smith and the predisposition of students be engaged thoughtfully, respectfully, and absent of dogmatism?

I propose that teaching economists would be well-served to distinguish between teleological and deontological ethical systems when introducing the topic of free trade. Consider that the conventional introduction to free trade reflects a utilitarian ethical system. Free trade is viewed positively because the consequences generate gains to society in excess of the losses. The winners from free trade gain more in total than is lost by those harmed by free trade. The conventional introduction of free trade is consistent

with the utilitarian ethic that assesses the morality of a policy based on the outcome. In particular the Smithian and Ricardian presentations clearly demonstrate that free trade policy generates the greatest good for the greatest number.

Opponents of free-trade policy can plainly comprehend the demonstration of the benefits of trade yet challenge the conclusion that the benefits exceed the costs. Opponents to free trade policy focus their analysis on the individual rather than the state. Whereas some individuals benefit from trade, others obviously do not. An opportunity exists to discuss the concept of distributive justice when students hesitate to embrace free trade due to experience with or sympathy for job losers.

Kantianism affords the instructor an opportunity to engage students and their sense of duty and obligation toward workers and, of course, respect for the dignity and autonomy of the individual. John Rawls (1971) has advanced an ethical system motivated by concern for fairness. *Distributive justice* identifies ethical acts as those that produce equity in the distribution of goods. The challenge rests in identification of a method of distribution. Rawls famously recommends a mental exercise to determine preference for a system of distribution. He suggests that individuals suppose they are shrouded in a *veil of ignorance* that denies knowledge of individual circumstances or circumstances of others. Cloaked, we do not know whether we are rich or desperate, healthy or lame, secure or threatened, intelligent or dim. Under conditions of uncertainty, Rawls contends that individuals would favor redistribution of income to provide for the least able to provide for themselves.

Accordingly, when jobs are lost due to relocation abroad, a discussion regarding the beneficiaries of the move can ensue. Clearly executives and shareholders benefit at the cost of dislocated workers at all levels of the organization but has someone's dignity or autonomy been violated? Are people being used to the benefit of others? Discussion of duty to workers, the firm, the community, lenders, shareholders, the environment, society at large can develop. These discussions reveal numerous trade-offs to evaluate and mitigate the zeal of both advocates and opponents of free trade or protectionist policies.

Finally, opponents of free trade may engage Rawls' mental exercise and determine that society must compensate those who are dislocated due to trade. One can then discuss the political process associated with redistribution and the economic trade-offs associated therein. Ultimately, one can ask students to consider how competing ethical approaches explain why adverse effects of international competition are compensated more generously than displacement resulting from domestic competition or economic conditions.

## **VI. CONCLUDING REMARKS**

This paper is motivated by the consistent resistance of undergraduate students to the presentation demonstrating the benefits of specialization and trade. Proponents of free trade ask, "How can you not favor free trade, having seen and heard the arguments favoring free trade?" An appropriate response by an instructor might be that advocates and opponents represent competing moral systems. Advocates of free trade embrace the utilitarian perspective that seeks the greatest good for the greatest number, whereas opponents concerned with the impact of displaced domestic workers or exploited foreign workers seem to represent a deontological morality consistent with Kantianism and its emphasis on respect for individuals. I assert that incorporating discussion of the competing moral systems enhances the understanding of the economic concepts and offers an opportunity for increased student engagement in the economic way of thinking. In closing, economics is fundamentally a normative discipline; it seems only appropriate that economic instructors acknowledge the inherent conflict of competing moral systems when presenting policy debates.

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### ENDNOTES

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<sup>2</sup> Social welfare as measured by total surplus is greater under conditions of free trade compared to autarky or after imposition of trade barriers such as tariffs or quotas.

<sup>3</sup> Caplan and Miller (2010) find that intelligence is the best predictor of whether non-economists share similar beliefs with the average economist. Previous research finds that education is the best predictor; however, Caplan and Miller (2010) find that the estimated effect of education falls after controlling for intelligence.

<sup>4</sup> Neither Bentham nor Mill completed doctoral studies in philosophy but both are renowned for their respective contributions to ethics.

<sup>5</sup> Karl Marx (1848) opposed free trade and would have been happy to share his position during the Free Trade Congress in Brussels in 1847; however, the congress closed before he had an opportunity to speak. He delivered the speech at the Democratic Association of Brussels a few months later in 1848. Jane Sasseen (2008) provides a brief overview of economists who are reconsidering the consequences of trade. Robert Driskill (2007) mounts a challenge to the traditional view of benefits from trade.

## **PARTISAN IDENTIFICATION OF NATURALIZED AMERICANS**

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### **ABSTRACT**

This paper examines the differences in partisan identification among immigrant populations in the United States. Typically, there is a small difference in an immigrant's party identification based on region of origin when he or she is from a country of Communist background. However, the majority of partisanship of naturalized and second-generation Americans is consistent with the partisan divide in the American population. This is baffling, as much of the literature indicates that immigration policy and socialization should influence immigrant partisanship.

## I. INTRODUCTION

Americans are socialized throughout their lifetimes to support specific political parties; however, this socialization is often missing for naturalized citizens who do not have the socialization and psychological attachments to political parties. This begs the question of what influences the partisan identification of naturalized Americans. Furthermore, how much of this is a function of their country of origin, and does it change during assimilation? How important is race or country of origin in forming this identification? Party identification is the foremost factor in determining vote choice in American elections, and the recent discussion about immigration reform has led to questions about the role that naturalized Americans will have on the future of political parties in the United States. Does their identification have any connection to their home country?

The American experience is one of immigration, and almost all citizens are descendants of immigrants (either recent or from several generations ago). Many of these Americans came to the United States for opportunity and freedom; others came for educational or professional pursuits. Regardless of their reasons for entry into the United States, the ways in which these naturalized Americans participate in the political system are paramount to understanding the immigration issues facing the United States. This factor is notably absent from the political science research, although it not only informs researchers on the differences among voters who are newly naturalized, but also provides insight into how to study these groups and the districts where there are large concentrations of new citizens and ethnic communities.

## II. PREVIOUS WORK

When looking at the literature on partisanship, it is important to acknowledge there are some characteristics that can contribute to party identification, such as age, gender, race, income, and education. When looking at these characteristics, one wonders if there is a connection between country of origin and the mere process of immigration that contributes to the choice of partisanship. Beliefs, such as partisan identifications, are not likely to change over time—in fact, they are considered quite stable (Campbell, et al., 1960). Some argue that party identification is developed early in life before any awareness of policy or ideological preferences (Hyman, 1959) and becomes stronger with the length of affiliation (Campbell, et al., 1960, 161–65). This leads us to assume that partisan identifications form in an individual's home country and since these are stable identifications, they should accompany the individual as they immigrate to the United States. However, there are academics who believe that partisan identifications are more permeable than the Campbell et al. hypothesis. Fiorina (1981) believes that partisan identification is a running tally of retrospective evaluations of party performances. While Fiorina's argument does not discount the Michigan school theory of party identification, it does lead to questions about whether these tallies can change party identification over time and if they are influenced by the country of origin. Therefore, it is possible that partisanship of subsequent generations of immigrants will be affected when their families move to the United States.

Groups are an important component in shaping individuals' outlooks on politics. These groups may be more or less visible; two important examples of these are social class and the nation of origin (Converse, 1964). Thus, individuals with immigrant status and their "groups" of similar naturalized Americans from the same country or region, or those with whom they simply share the common experience of having immigrated to the United States will have interactions that influence their partisan identification. This is supported by Converse, who states that nationalist ideologies penetrate the mass population (Converse, 1964). Therefore, if nationalistic ideologies are more open to penetrability, then partisanship is influenced by and possibly changed by the immigration and naturalization processes.

The research on partisanship suggests that party identification does not develop in a vacuum. Rather, there are influences of national ideologies and personal experience on partisan identification. These are further influenced by personal attachments to political processes, which are a result of the socialization

process (Jacoby, 1988) link. The stronger the link between the party platform and the individual's own attitude, the stronger an individual's attachment is to a political party (Jacoby, 1988, 657).

In addition, the location of residence in the United States can shape the party identification of those who live there. Naturalized Americans are more likely to reside in urban areas, and these urban areas tend to have stronger ties to the Democratic Party (Tuckel and Maisel, 1988). Despite the connection to urban communities, immigrants are more likely to continue some connection to their home countries and potentially to the politics of those countries. Thus, we would expect that in terms of politics, naturalized Americans would differ from native-born Americans in their partisan identification. Tuckel and Maisel go on to explain the urban-immigrant interaction and immigrant turnout at elections by postulating that there is a conflict between the host population and the immigrant group (Tuckel and Maisel, 1988, 427). In cities "where immigrant groups and their children outnumbered the native-born population, political machines were formed which both represented the interests of these first- and second-generation groups and, at the same time, were nurtured and sustained by their presence" (Tuckel and Maisel, 1988, 427). Thus, in immigrant communities, generations of naturalized Americans have political groupings that are reinforcing cultural beliefs and political allegiances. While these groups are assimilating, they also have separate political entities, which reinforce their political ideologies from their home countries as well as their shared experiences in the United States.

New Americans moving to the United States, a group formerly dominated by Western Europeans, now tend to be immigrants from Latin America and Asia. Cain, Kiewiet and Uhlaner (1991) look at California because of the large population of naturalized Americans in this state. They find that the longer naturalized Latino Americans are in the United States, the stronger their identification is with the Democratic Party. This could explain the strong Democratic base in California. Cain, Kiewiet and Uhlaner (1991) also suggest that immigrants from China, Korea and Southeast Asia become more Republican after increased length of residence in the United States and increased exposure to American politics. They measure increased exposure to American politics by the length of time that a person/group has lived in the United States, which is compelling because it explains the changes in partisan identification of naturalized Americans that happens over generations and time in the United States.<sup>2</sup>

The length of time an individual's family has been in the United States is likely to impact that individual's assimilation into the United States, as well as and impact his or her acquisition of partisan allegiances. Humphrey and Louis (1973) study Greek Americans and their support for ethnic candidates and party affiliations. They find that Greek Americans have not fully assimilated into American society, but by the third generation, there is a significant decrease in ethnic identification. Wong (2000) also looks at the acquisition of partisanship by Asian and Latino Americans; she finds that there is a strong relationship between lengths of time lived in the United States and the acquisition of partisanship. Thus, after several generations in the United States, successive generations will identify a partisan division similar to Americans who have been in the United States for multiple generations.

### **III. THEORY**

The literature on naturalized-American partisan identification leads us to assume that there are differences in the way naturalized and native-born Americans approach party identifications. These identifications will come from sources other than the traditional means of socialization, so there should be a distinct difference in the partisanship of non-American-born individuals over time. These differences should be distinct, as historically, new immigrants are more likely to live in areas where their views will be reinforced by other immigrant communities. Also, their partisan identification and socialization in their birth countries will shape their partisanship and experiences in their new country. While this is not a universal effect, an immigrant's community and early socialization should have some influence on that person's party identification. This leads us to the hypothesis of this paper:

*Hypothesis: Naturalized Americans will be differ in their partisan identification than those who are native-born Americans.*

The contributions of socialization should impact party identification among naturalized and non-naturalized Americans. We can expect that there will be effects from the country of origin due to previous political exposure and regime type. This should be particularly evident for naturalized Americans whose countries of origin had communist governments because of the historical political overtones that exist in the political systems of both their home countries and the United States. Further, because of this socialization process we should expect that there are effects for subsequent generations of immigrants, particularly for the progeny of naturalized Americans (also known as second-generation Americans) because their parents influence their socialization.

#### **IV. DATA AND METHODS**

To investigate the party identification of naturalized Americans, I utilized the Cumulative National Election Survey (NES). This is a combination of all national elections between 1942 and 2004, which share similar questions. In the NES respondents were asked where they were born, these were coded into native and nonnative American respondents, respectively. In addition, in order to determine second-generation immigrants, respondents were asked if their parents were born in the United States or elsewhere, and these answers were coded into native and nonnative born dichotomous groups. Further, the countries and regions of origin were coded (see Table 2). This has some practical as well as theoretical reasons. Practically, it makes it easier to understand individual countries (for issues such as ideology); grouping countries together may contribute to our understanding of the role that ethnicity plays in partisan attachments, rather than just country of origin. In addition, to provide some context to the findings in Table 5, two additional tables look at Communist origins and second-generation partisans. The Communist variable includes Cuba, East Germany, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Poland, USSR (Russia), Ukraine, Albania, Yugoslavia, China and Afghanistan.<sup>3</sup> Other control variables include a dummy male/female variable and incremental variables for income and age to account for traditional influences on partisanship.

In Table 1, the percentage breakdown of partisan identification among native- and nonnative-born Americans is similar. Native-born Americans' identification with Democrats is only slightly higher and their identification with Republicans and independents is slightly lower than amongst those who are naturalized Americans. To flesh out these results, I have created a cross-tabulation of party identification by region of birth to see if this breakdown is mirrored by country of origin in Table 2. Table 1 demonstrates that the sample of nonnative born is similar to that of the sample of native-born Americans in the cumulative NES dataset. Beyond illustrating the composition of the sample, it is valuable to look at the immigrants' countries of origin and their partisan identification, as Table 2 does.

<b>TABLE 1. NATIVE/NONNATIVE PARTY IDENTIFICATION</b>		
	Native Born	Naturalized
Democrats	17,991 (52.2%)	862 (50.9%)
Republicans	12,052 (35.0%)	608 (35.9%)
Independents	4,430 (12.9%)	220 (13.0%)
<u>Total</u>	34,473 (100%)	1,692 (100%)

Regardless of birth region (with the exception of those from Asia and the Near East), Americans are more likely to identify with the Democratic Party than with the Republican Party. This is both surprising and expected. Across the United States, the Democrats generally have more identifiers than any other party, so the fact that this extends to all regions of birth is not unexpected. However, the discovery that there is little difference in the identification patterns of naturalized Americans and those who are native-born is still problematic. The United States has had several interventions in Asia and the Near East, and usually these interventions were led by Republicans, so there are all sorts of possibilities as to why naturalized Americans from these regions identify with the Republicans. One reason could be that the administrations that intervened in their home countries (such as Vietnam) were led by Republicans. Another explanation could be the year or party of the government in power when they arrived in the United States, and while we cannot test these explanations, it does provide areas for future work. A third explanation for division of partisan identification by region could be the political regimes of these countries. Table 3 looks at the breakdown of nonnative-born Americans' partisan identification based on who came from Communist countries.

TABLE 2. BIRTH LOCATION PARTY IDENTIFICATION<sup>a</sup>

<i>Party Identification</i>	<i>Birth Region</i>										
	United States	North America <sup>b</sup>	Western Europe	Eastern Europe <sup>c</sup>	Britain	Scandinavia	Latin America <sup>d</sup>	Asia	Near East	Africa	Other
Republican	12,052 35.0%	66 35.7%	164 35.7%	79 23.1%	50 36.0%	45 59.2%	95 34.7%	78 50.3%	23 60.5%	3 23.1%	6 40.0%
Democrat	17,991 52.2%	100 54.1%	230 50.1%	217 63.5%	72 51.8%	22 28.9%	152 55.5%	46 29.7%	12 31.6%	8 61.5%	7 46.7%
Independent	4,430 12.9%	19 10.3%	65 14.2%	46 13.5%	17 12.2%	9 11.8%	27 9.9%	31 20.0%	3 7.9%	2 15.4%	2 13.3%
Total	34,473 100%	185 100%	459 100%	342 100%	139 100%	76 100%	274 100%	155 100%	38 100%	13 100%	15 100%

<sup>a</sup> Rounding accounts for why the columns do not add perfectly to 100%.

<sup>b</sup> North America.

<sup>c</sup> Includes Balkans.

<sup>d</sup> Includes Central, South America and Mexico.

<b>TABLE 3. EMIGRATED FROM A COMMUNIST-IDENTIFIED COUNTRY</b>		
	Communists	Non-Communists
Democrats	212 (62.5%)	652 (48.2%)
Republicans	79 (23.3%)	172 (12.7%)
Independents	48 (14.2%)	529 (39.1%)
Total	339 (100%)	1353 (100%)

Table 3 displays the differences between nonnative-born Americans who came from Communist or former Communist countries. There have been changes in immigration patterns over the last thirty years as immigrants from former Soviet Bloc and developing countries now move to the United States for employment, rather than for political freedom. There is a growing trend for educated people to move to the United States for highly skilled employment opportunities. Nonetheless, the remnants of Communist-era politics are likely to have some influence on the political viewpoints of immigrants from these countries. While the Democratic Party is in no way a substitute for the Communist Party or system, some aspects of the Democratic Party platform will seem familiar to and will appeal more to these immigrants. Aspects of this platform include a social safety net, equality of opportunity, and public goods. While these individuals obviously emigrated for a variety of reasons, their socialization and life experiences contribute to their views of the American political system and many will be likely to gravitate toward what is familiar, even if the connection between their home systems and the Democratic Party is minimal. Table 3 shows that those who emigrated from a Communist country have a higher percentage of Democratic identifiers. The majority of naturalized Americans do not come from countries with Communist ties, and a higher percentage of them identify themselves as independent. The question that grows out of these results is, “Do these partisan alliances change after families have been in the United States for more than one generation?” Table 4 addresses this issue.

<b>TABLE 4. FIRST GENERATION PARTY IDENTIFICATION</b>				
	Democrats	Republicans	Independents	Total
Native Born <sup>a</sup>	13575	9405	3474	26454
	51.3%	35.6%	13.1%	100%
Naturalized <sup>b</sup>	711	483	188	1382
	51.4%	34.9%	13.6%	100%

<sup>a</sup> The respondent and his/her parents were born in the United States.  
<sup>b</sup> The respondent was born in the United States but his/her parents were not born in the United States.

The length of time a group resides in the United States affects the partisan identifications within that group. As Humphrey and Lewis (1973) and Cain, et al. (1991) discuss in their articles, the assimilation process into the United States takes more than one generation. Therefore, partisanship should change with each successive generation and its assimilation processes. This is the foundation for Table 4, where there is little difference between the three groups in regard to the percentage of individuals who identify as Democrats, Republicans and Independents. What is interesting is that second-generation respondents have a slightly higher percentage of Democratic identifiers and a smaller percentage of Republican and Independent identifiers. However, this is much like the difference identified in the public as a whole. This minor 5 percent difference could be a result of being in the country longer, and if we were able to tweak out successive generations, it would be theoretically insightful to determine if Democratic identification

increased or decreased with each generation. Unfortunately, the necessary data are not currently available, making it difficult to measure the generational changes. Regardless, the difference of subsequent generations indicates that partisan identification, while mainly stable, changes by generation as immigrations assimilate into the American culture. Both of the variables detailed in Tables 3 and 4 are investigated in Table 5 with some control variables.

<b>TABLE 5. MULTINOMIAL LOGIT OF PARTY VOTES</b>			
<i>Party</i>	<i>Coefficient</i>	<i>Robust SE</i>	<i>Predicted Probabilities</i>
<b>Democrats</b>			
Communist	.015	(.210)	.132
Male	-.144**	(.037)	-.025
Parents Born	-.161*	(.055)	-.081
Income	.129**	(.017)	-.113
Age	.179**	(.011)	.012
Nonnative	-.208	(.110)	.084
Latino	.167	(.146)	.069
Black	.716**	(.122)	.274
Asian	-.716*	(.201)	-.190
White	.001	(.110)	-.056
Constant	.586**	(.134)	
<b>Republican</b>			
Communist	-.848**	(.238)	-.160
Male	-.060	(.039)	.013
Parents Born	.238**	(.059)	.079
Income	.332**	(.018)	.202
Age	.230**	(.012)	.111
Nonnative	.173	(.114)	.079
Latino	-.162	(.166)	-.064
Black	-.783**	(.142)	-.243
Asian	.085	(.241)	.149
White	.325*	(.120)	.070
Constant	-1.13**	(.147)	
Number of Observations		30190	
Wald Chi <sup>2</sup>		1843.93**	
Pseudo R <sup>2</sup>		.0419	
Party identification equal to Independents is the comparison group. * p< .05 **p<.01			

Table 5 utilizes a multinomial logit to determine party identification. The dependent variable is nominal, therefore, the more frequently used multivariate regression is not an acceptable methodology for this analysis. Independents are used as the base category to provide more detail on the Republican and Democrat identifiers. Further, because a multinomial logit cannot be interpreted directly, I have included predicted probabilities. This provides a more advanced look at partisan identifiers and combines the information provided in Tables 3 and 4 in a more controlled environment.

In this table, the first confirming explanation we see is that the likelihood that voters will identify as Republican if they come from a Communist nation decreases 16 percent. This reiterates the findings from Table 3. The likelihood of a second generation of naturalized Americans (utilizing the variable parents—foreign-born) identifying with either party is 8 percent; however, the results move in opposite directions—negative for Democrats and positive for Republicans. This is important because it shows that second-generation Americans are more likely to identify with Republicans than independents and less likely to identify with Democrats than independents. Surprisingly, this is one of the few variables that is statistically significant for both Republicans and Democrats. Another statistically significant variable for both parties is African-Americans. The probability of this group identifying with Republicans is negative and positive for Democrats, consistent with the voting literature. The most important variable in this analysis, whether voters are immigrants, is not statistically significant for either party, illustrating that naturalization status is not an important factor in identifying with either party when compared to independents. Thus, while there are differences in region of origin and in subsequent generations on immigrant partisanship, when looking at the overall effect on partisanship decision-making, immigration history does not play a role.

## V. CONCLUSIONS

The identification of nonnatives correlates with the pattern of native-born Americans' partisan identification. This is surprising because, based on the theory of this work and previous literature in this area, we would expect differences in partisanship. Of course, like the majority of Americans, the majority of naturalized Americans identify with the Democratic Party. The results support the national trend that the Democratic Party has more identifiers than Republicans or Independents on a national scale, and this is supported for both native-born and naturalized Americans. However, there is a correlation of identification of naturalized and native-born Americans, when taken as an aggregate, which is surprising, based on prior research about the differences between the two groups. Nonetheless, there is a higher proportion of nonnative-born Americans from Communist countries who identify with the Democratic Party, which shows that socialization and political culture of the birth country can influence party identification of naturalized Americans. The results in Table 5 are puzzling and problematic for this study, as they show the results for nonnatives to be statistically insignificant and that second-generation Americans tend to identify with the Republican Party. This is a direct contradiction of Table 4, which shows that second-generation Americans are more likely to identify as Democrats. These findings should not be dismissed at face value; one reason for this dichotomy is that the assimilation process affects immigrants at different levels and certainly, the impact of country politics on a second-generation citizen is going to be less significant. When we control for other socioeconomic factors, second-generation status is not a factor in partisanship.

This paper does not attempt to detail the contributions of immigrant populations, some more recently arrived than others, on political parties, but rather looks at the impact of new immigration on party identification. There does seem to be cohesion in the number of native and nonnative Americans who identify as Republican, Democrat or Independent. Perhaps it is the assimilation process that takes place between arrival in the United States and attaining citizenship that is responsible for this lack of difference. Assimilation may change the identification of nonnatives to correlate with that of native Americans. This conclusion is based on the assumption that people who immigrate to the United States have a political identification prior to arrival and are willing to change or assimilate this identification once they are in the United States.

## **VI. AREAS FOR FUTURE RESEARCH**

Further research in this area should focus on participation levels and political identification of naturalized Americans in their birth countries and how this identification and these participation levels change once they immigrate to the United States. One limitation of my research is that there was no comparison between immigrants' initial identification and whether or not it has changed. It could be that there are more Democratic identifiers worldwide.

Further research could also determine if the political situation at the time of entry had any influence on naturalized Americans' partisan identification. Furthermore, looking at immigrant partisan identification and how this develops both before and after naturalization may be an impetus for policy changes in the federal administration, if there are any causal relationships between partisanship and immigration policies. If there were trends in party identifications among specific groups of naturalized Americans, it would be fascinating to link American political parties' immigration policies with these identifications to see if there is a link between these policies and partisanship and determine whether this is a post-naturalization development or a response to the party that enabled the migration. This paper focuses on the partisan identification of naturalized Americans because it is the starting point of a larger project that will examine links between immigration policies, American parties, partisan identification and regions of origins for naturalized Americans.

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### ENDNOTES

<sup>1</sup> Dr. Shauna Reilly is a political behaviorist who studies the impact of citizen behavior on institutions in the United States. As an immigrant to the United States herself, this paper is based on personal interest in immigrant political behavior.

<sup>2</sup> The number of years in the United States is not available in the Cumulative National Election Survey.

<sup>3</sup> The author notes that these are not all still Communist countries, but for the purpose of this study they are coded as Communist. While it is not currently possible to determine whether the naturalized citizen immigrated to the United States while their home country was under Communist rule, one could assume that there is a common culture among these countries and their ideology. North and South Korea are recorded together and all South American countries are coded together in the dataset, so there is no way to differentiate which of these respondents came from a Communist country; therefore, they are currently not coded as Communist, biasing these results towards a null finding. The countries included do not represent all the possible countries that are (or were) Communist, but they provide an excellent base for comparison and insight into the role that country ideology may play in determining ideology once the immigrant is in the United States.

**LOSING THE WORLD: ANOTHER ADAM SMITH PROBLEM:  
AGENCY AND MEMORY IN ARENDT AND SMITH**

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(This paper is dedicated to the late Don Lavoie; friend, lover of wisdom, and fellow Arendt enthusiast.)

**ABSTRACT**

For Hannah Arendt, action is essentially “for the sake of the world.” She takes the work of Adam Smith in *The Wealth of Nations* to exemplify the loss of the world that characterizes modern thought. This paper argues, however, that in his earlier work, *The Theory of Moral Sentiments*, Smith’s conception of agency is much closer to Arendt’s and that it indeed contains resources for elucidating Arendt’s views. The “loss of the world” between Smith’s two great works, it is then argued, provides a more interesting and richer “Adam Smith problem” than the standard characterization.

*This is how one pictures the angel of history. His face is turned towards the past. Where we perceive a chain of events, he sees one single catastrophe, which keeps piling wreckage upon wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. This storm irresistibly propels him into the future, to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress.*  
—Walter Benjamin, *Illuminations*, 257–58

Hannah Arendt's conception of action is predicated on a view of human agency that is radically at variance with the view that underlies rational choice theory. I want to highlight the key role of *memory*, for both the actor and the spectator, in Arendt's account of action. If Arendt is right about this, then the irrelevance of memory in certain important ways for "rational" agency (agency in accord with the dictates of rational choice, that is) makes for a stark contrast. Memory in turn is, for Arendt, bound up with the existence of a "world." The crucial concern of her work is the world-alienation of the modern agent, who labors and works and consumes but is unable to act, and is therefore deeply unfree. Decision Theory describes agents who are unable to act "for the sake of the world" and who are therefore "world-less," I argue.

In a key passage in *The Human Condition*, Arendt links modern oblivion about action, and about the site of action—what she calls "the world" or "the public realm"—to Adam Smith. While the Smith text she cites, from *The Wealth of Nations*, is indeed guilty as charged, I argue that there are elements of *The Theory of Moral Sentiments* which can be read as recognizing and indeed helping us understand the world as Arendt understands that notion. Thus we have another Adam Smith problem, how to reconcile the existence of the world in the earlier book with its disappearance in the latter.

## I. INTRODUCTION

The view of ourselves that we have on offer from decision theory makes us creatures for whom memory serves a purely instrumental, information-gathering function, and who derive whatever unity we have from the dynamic plan we form for time  $t$ , the present, to infinity, based on rationally formed expectations about the future. For Arendt, by contrast, memory, both individual memory and the organized remembrance that the polis consists of, has the function of creating meaning—which is not any species of welfare. And for Arendt, "it is memory and not expectation (for instance, the expectation of death as in Heidegger's approach) that gives unity and wholeness to human existence" (Arendt, 1996, 113). For rational choice theory, a reason to act must refer essentially to expected future welfare consequences, and never, for example, to the need to fulfill commitments undertaken in the past, or to the effect of the action on the meaning of the agent's past—unless these concerns can be reduced, counter-factually, to disguised concerns about future welfare consequences. And while rational choice theory may seem to have no problem accounting for action motivated by *wanting to be* remembered, as opposed to action taken for reasons that refer essentially and irreducibly to the agent's past—the former does seem to be concerned exclusively with expected future consequences—Arendt's account of what such glory-seeking amounts to will, I argue, implicitly deny that as well.

So there are two different senses in which action, for Arendt, is bound up with memory. First (but second in the order of exposition) action is essentially the agent's *story* ("action... 'produces' stories with or without intention as naturally as fabrication produces tangible things" (*Human Condition*, 184)). The Arendtian actor, we may expect, therefore, seeks to give her life "narrative unity," to use Alasdair MacIntyre's influential characterization of what he takes to be a requirement of a non-instrumental, Aristotelian conception of practical reason (in *After Virtue*; see also Elizabeth Anderson, *Value in Ethics and Economics*). What the actor should do is determined in part by whether and to what extent it fits into

the story of her life that she has been telling to this point, and thus depends, essentially, on the past and memory. We take this up further below.

Second—and the sense with which we will start—when we act, for Arendt, we are seeking *to be remembered*. In this respect, she is not imagining that we seek to *please* others, who will yield up to us in payment the commodity of admiration—a position easy enough to find in Hobbes and which Arendt lambastes as it appears in Smith, as we'll soon see. To be remembered, we might say, anticipating the argument requires that we do something truly memorable: acting in this sense is “for the sake of the world”—we may be admired for something that is not truly memorable, and fail to be admired for something that turns out to be truly memorable. For Arendt, being remembered requires a public realm, a world held in common, and the judgment that goes on in this common world with regard to our words and deeds establishes what they mean and how and whether they will be remembered.

## II. THE SPECTATOR, MEMORY AND THE WORLD IN SMITH AND ARENDT

To pursue this, let's examine a long quote from the *Human Condition* where Arendt seeks to stake out her position against Smith, whose modernism is betrayed, she thinks, in his inability to understand the notion of a public realm, a common world: The terrible thing about the modern era is that it has subjectified everything and left us “world-less:”

What the modern age thought of the public realm, after the spectacular rise of society to public prominence, was expressed by Adam Smith when, with disarming sincerity, he mentions ‘that unprosperous race of men commonly called men of letters’ for whom ‘public admiration makes always a part of their reward..., a considerable part in the profession of physic; a still greater perhaps in that of law; in poetry and philosophy it makes almost the whole.’ Here it is self-evident that public admiration and monetary reward are of the same nature and can become substitutes for one another. Public admiration, too, is something to be used and consumed, and status, as we would say today, fulfills one need as food fulfills another: public admiration is consumed by individual vanity as food is consumed by hunger. Obviously from this point of view the test of reality does not lie in the public presence of others, but rather in the greater or lesser urgency of needs to whose existence or non-existence nobody can ever testify except the one who happens to suffer them. And since the need for food has its demonstrable basis of reality in the life process itself, it is also obvious that the entirely subjective pangs of hunger are more real than ‘vainglory’, as Hobbes used to call the need for public admiration. *Yet even if these needs, through some miracle of sympathy, were shared by others, their very futility would prevent their ever establishing anything so solid and durable as a common world. The point then is not that there is a lack of public admiration for poetry and philosophy in the modern world, but that such admiration does not constitute a space in which things are saved from destruction by time.* The futility of public admiration, which daily is consumed in ever greater quantities, on the contrary, is such that monetary reward, one of the most futile things there is, can become more ‘objective’ and real (Arendt, 1958, 51–52, emphasis added).

This is a very interesting and complex passage. I have cited it often as a critique of what amounts to an anticipation of rational choice theory in Smith; certainly that theory would have no problem with the idea that, for the choosing agent, “public admiration and monetary reward are of the same nature, and can become substitutes for one another.” So the target seems to be impoverished accounts of motivation, accounts that suppose us to be maximizers, with marginal rates of substitution between things that differ radically in quality. But as the passage proceeds, the target shifts subtly, so that by the end the problem seems to be that public admiration in the modern age, “because it does not constitute a space in which things are saved from destruction by time,” really is substitutable for monetary reward, whatever its

seeker might think. Here it is not the *consumer* of glory or admiration whose consuming and commensurating stance destroys the good; instead, the good is inherently shoddy, made to be consumed and traded off, given the way it is *produced* in the modern age. But of course the producers of public admiration are simply the consumers of “poetry and philosophy,” so that ultimately it looks like the consuming stance that is the problem after all. “A consumer’s society,” she says in a passage from a later work, (Arendt, 1954, 211), “cannot possibly know how to take care of a world and the things which belong exclusively to the sphere of worldly appearances, because its central attitude toward all objects, the attitude of consumption, spells ruin to everything it touches.”

Now the editors of the English language version of Arendt’s dissertation, *Love and Saint Augustine*, have pointed out that memory in that earlier work is described in the same terms as the public realm in her later work. Memory in the earlier work, like the public realm in the later work, is “a space in which things are saved from destruction by time.” The public realm is essentially a realm of memory. In the *Human Condition* we are told (Arendt, 1958, 198) that “the organization of the *polis* ...is a kind of organized remembrance. It assures the mortal actor that his passing existence and fleeting greatness will never lack the reality that comes from being seen, being heard, and, generally, appearing before an audience of fellow men.”

Can we then make a distinction between admiring and remembering, first, and between seeking admiration and seeking to be remembered, second, that will clarify this passage?

It turns out that the distinction that we want here, if it is to do the job, will begin to look surprisingly like a distinction in, of all people, Adam Smith, Arendt’s whipping boy in this passage—albeit from an earlier book of his, and one which, in the eyes of many readers down through the ages, conflicts in many ways with the later book, *The Wealth of Nations*, that Arendt is quoting from.

Smith, in his *Theory of Moral Sentiments (TMS)*, makes a distinction between seeking the actual praise of others and seeking their “appropriate” praise; if we are praised for something that we didn’t deserve, we won’t be happy, or so he argues, nor would we be upset with undeserved blame. A large part of the function of the Impartial Spectator in *TMS*, in my view, is to take us from actual to warranted praise and blame as objects to be sought or avoided, respectively. Notice, if this is right, what has happened to reason in Smith. I would argue that on this interpretation of *TMS*, reason is no longer simply the exclusively instrumental reason that it was for Hume and continues to be in decision theory and neoclassical economics. Smith is no longer, if I am right, in the business of exclusively hypothetical imperatives (if you want approval, do this) but, with the appeal to “propriety” we are on our way to a quasi-substantive rationality: These things are *worthy* of approval and should therefore be done, whatever you desire; these things are not. When we ask ourselves “Would the Impartial Spectator approve?” we are filtering our desires, constraining them, very much as Kant’s categorical imperative has us do. We can say that we have a second-order preference for doing what would please an impartial spectator, but this is just an empty form of words: It’s not an empirical question, it’s a question for practical, non-instrumental reason: What *appropriately* pleases or displeases others; simply *that* is what “pleases” the Impartial Spectator. There is ambivalence in Smith, but he often speaks this way; the language is especially likely to be used where he is concerned about distinguishing himself from Hume. Smith was, I think, a Sentimentalist on his way out to a position that looks more like Kant—anachronistically, obviously—that is, the same problems Kant had with Hume bother Smith. But he doesn’t get out for reasons I look at below.

There is an extraordinary passage in *TMS* where the tension with Hume emerges starkly, if somewhat obliquely. Smith describes a European with no ties to China contemplating the news of an earthquake that has swallowed all the Chinese: “If he was to lose his little finger tomorrow, he would not sleep tonight;

but, provided he never saw them he will snore with the most profound security over the ruin of a hundred million of his brethren (Smith, 1976, 137).” He goes on to ask whether this man would will the death of millions to prevent the loss of his little finger. As the editor notes, Smith here is echoing a very famous passage in Hume, in *The Treatise*, where Hume says: “It is not contrary to reason that I prefer the destruction of the whole world to the scratching of my little finger.” This is a critical passage in the statement of what has come to be called the Humean conception of reason: The conception that makes reason simply instrumental, a slave of the passions, as he says, unable to set us ends (except in showing us the proper means to other ends that our passions give us) or motivate us.

The point of Smith’s passage is not to challenge Hume’s conception of reason—and, indeed, there are passages in *TMS* which trot out the Humean line in this regard. What he says is that the man will refrain from such an act, but that what prevents it and what accounts in general for our generous actions, is not, typically, any sentiment of benevolence or humanity. Not the “feeble spark of benevolence” but rather “reason, principle, conscience, the inhabitant of the breast, the man within, the great judge and arbiter of our conduct” explains our generous and noble actions. Here he is explicitly challenging the view of both Hutcheson and Hume that we act morally as a result of benevolent sentiments of any sort. But implicitly, given the echo of Hume and the context for Hume’s example, Smith is challenging the notion that reason is purely instrumental—in many ways the core innovation of Humeanism. In the cited passage, “reason” directly motivates, contrary to the Humean doctrine: It is indeed contrary to “reason, principle, conscience, the man within the breast” Smith would appear to be saying, to prefer the destruction of the whole world to the scratching of my finger. In Kant’s terms, Smith is implying that pure reason can be “practical,” that it can motivate us to act independently of and indeed in the teeth of our inclinations. Despite the on-balance opposite pull of our sentiments (the feeble spark of benevolence being, Smith thinks, dominated as an empirical matter by the opposite pull of self-love) we nonetheless act as reason dictates.

Smith goes further: One could read this passage as saying simply that as a matter of fact our moral actions don’t stem from benevolent feelings. But in a later passage, we find Smith deep in Kantian territory, arguing in effect that sentiment-motivated benevolence, when it does occur, has, as Kant (2010: 8–9) would say, no moral worth. That is, that *conceptually*, not just as a matter of fact, a moral action cannot be motivated by sentiment alone. Anticipating Kant’s discussion of “the friend of all humanity” in the *Groundwork*, Smith (Smith, 1976, 190–91) distinguishes humanity from generosity, where the former means sentiment-motivated benevolence (“the exquisite fellow-feeling which the spectator entertains for the sentiments of the persons principally concerned”) and the latter consists in acting against our own interests in virtue of the *judgment* that our interest is less important than that of another. On the other hand, as compared to generosity, “the most humane actions require no self-denial, no self-command, no great exertion of the sense of propriety.” Although Smith doesn’t say it, implicit in what he says about acting from humanity is that such action is not distinctly moral action (just as, for Kant, the actions of the friend of all humanity, while conforming to the moral law, nonetheless do not have moral worth because they are not done out of respect for the law): For there is no doubt that self-command and exertion of the sense of propriety—just what Smith denies are operating in the case of humanity—are at the core of morality for Smith.

There are certainly passages that can be cited in Smith that revert to Sentimentalism and understand the use of the Impartial Spectator either as a kind of fellow-feeling with others or as simple vainglory and pursuit of praise. Perhaps the most explicit statement that this is not his view appears in the last chapter, “Of Moral Philosophy.” Here he says (Smith, 1976, 266–267) that there are three broadly different ways of understanding “the nature of virtue” on offer. The first sees virtue in prudence and the pursuit of “the selfish affections.” The second finds virtue in the benevolent affections. The third, of which his own theory is exemplary, finds virtue to consist “not in any one species of affections, but in the proper government and direction of all our affections, which may be either virtuous or vicious according to the objects which they pursue and the degree of vehemence with which they pursue them.” This third class

makes virtue consist in “propriety.” The Impartial Spectator, as the correlate of virtuous behavior, is a mechanism for making *judgments* about the propriety of our actions or proposed actions. Like virtue itself, then, it can not be reduced to a creature of our sentiments, of either our vainglory or our benevolence. It is the instrument—a non-instrumental reason, in effect, I have argued—for judging and governing our affections. So this is not, as they say, your mother’s Moral Sentimentalism!

With some irony, as it turns out, this material from *TMS* can be used to make better sense of Arendt’s critique of the passage in *The Wealth of Nations* cited above, which appears to rely on a distinction between seeking public admiration and seeking to be remembered which is not obvious on its face. Perhaps we can say that what will be remembered is not necessarily what is admired in the moment, but what is *appropriately* admired, so that memory takes us out of the subjective into the objective just like the move to the Impartial Spectator in Smith? And by the same token, that to seek appropriate admiration is to seek to be remembered by posterity; that superficial admiration, because it will have no permanence, doesn’t please us any more than superficial censure, which is likely to be reversed with the years, will take away the *raison d’être* for our action. On this reading, seeking to be remembered by posterity amounts simply to serving the world. Here we need to look at Arendt’s appropriation of Kant’s *Critique of Judgment* to think about the spectator’s role in the public realm.

Arendt sees the spectator as *judging* the performance of the political actor, where judgment is understood the way Kant’s third critique understands judgments of aesthetic taste. Famously, Kant thought that such judgments, though not possessed of the universality of pure reason, were nonetheless objective and disinterested. Arendt says about his position, “Therefore taste, insofar as it appeals, like any other judgment, to common sense, is the very opposite of ‘private feelings’” (Arendt, 1954, 222) and again: “Taste judges the world in its appearance and in its worldliness; its interest in the world is purely ‘disinterested,’ and that means that neither the life interests of the individual nor the moral interests of the self are involved here. For judgments of taste, the world is the primary thing, not man, neither man’s life nor his self.” (*ibid.*)

Actions that are remembered by Arendt’s spectator, then, like those that pass muster with Smith’s Impartial Spectator, have met certain normative criteria. To remember *x* and not *y* is not at all to prefer *x* to *y* in any subjective sense, but to judge that *x* is memorable and *y* not. Ultimately, and here I am going out on a limb where I can’t be sure Arendt would follow, I think that worldliness *essentially* involves the coming into play of a *normative*, and thus non-empirical, realm. This is why I think Smith in effect had a world appearing when he thought of the Impartial Spectator in the way I have singled out (he didn’t always, though—not consistently in *TMS* and certainly not in the passage Arendt finds so offensive from *WN*). In thinking about Arendt, I have found it extremely helpful to analogize action in the, or *a*, world to participation in a “practice” in Alasdair MacIntyre’s sense. Recall from MacIntyre (1981) that such a participant seeks to perform according to authoritative standards of excellence for the practice: this is to be motivated neither by self-interest nor by altruism; participation in a practice resists assimilation to the decision—theoretic perspective altogether—it is in my view the hardest such irreducible, though not the only one. What makes it resist assimilation is, again, the irreducibility of the normative—in the form of authoritative standards of excellence which must enter into the explanation in any plausible account of what we are up to when engaged in a practice.

Unfortunately, “worlds” don’t raise their heads in Smith again, perhaps because they offend against a certain conception of science modeled on the natural sciences. The irony, as Jean Hampton points out in *The Authority of Reason* (1998), is that proscribing norms altogether would do away with norms of theoretical reason that make natural science what it is: it is a norm-based practice, through and through. These are not moral norms, or norms of practical reason, but they have the same “queer” epistemological status, and they exercise the same odd authority over us, as these others (see Larmore (1996) on this point as well). Hume’s genius, in which he was followed right on down through the centuries by economists and decision theorists (albeit with some short-lived resistance from his co-national and friend Smith—if this is right) was apparently to tame the normative, by taking any apparently categorical imperative—do *x*

whatever you desire, *e.g.* into a hypothetical imperative—if your goal is *y*, do *x*. There doesn't seem to be any mystery about the “authority” of the latter, instrumental norm. Making reason merely the helpmate and slave of the passions seems to take the normative out of play and free the social sciences for genuine science, along the lines laid down by the natural sciences. (Hampton argues, provocatively, though, that instrumental reason itself fails to be instrumental, that underlying the hypothetical imperatives are categorical imperatives—such as, in decision theory, ‘make your preferences consistent.’ She argues that economics cannot proscribe genuine normative explanation, therefore; and that the theory of instrumental reason implicitly and unconsciously upholds a substantive rationality, a position on what ends the agent has reason to pursue, on what an agent’s good consists of—an ethic if you like—but an ethic which is, not surprisingly, given its unconscious status, not a very good or convincing one.)

Though Arendt was right, therefore, to find no notion of the world in the quote from *Wealth* she uses, to find in fact the worldlessness that will come to be one of the most striking characteristics of decision theory, Smith did have such a notion earlier, though obviously not so named. Indeed, I find Smith’s *TMS* can deepen our understanding of Arendt’s concept in ways I have tried to lay out. For Smith, as the poet says, “a road diverged:” Unfortunately, he took, in later work, the one *more* traveled on—and that’s made all the difference.

### III. THE ACTOR BETWEEN PAST AND FUTURE: LOOKING BACKWARD

Besides seeking to be remembered for glorious words and deeds, Arendt’s actor pays attention to her own past in ways that a “rational” chooser would not. Perhaps most importantly, she commits herself. For a modern game theorist, keeping a commitment may well be “rational” despite its requiring onerous counter-preferential actions today—provided it sets the stage for future utility, the discounted value of which more than outweighs the disutility of today’s action. Thus in the iterated prisoner’s dilemma, we keep our commitment to cooperate at some cost today, to induce cooperation, and correspondingly greater benefits, tomorrow. Since this analysis seems not so much to explain as to explain away the notion of commitment (as Sen noted in “Rational Fools,” commitment is essentially counter-preferential choice), the defender of rational choice always has in reserve an option that seems to preserve something of common sense, but only by emptying out the theory of any content: I mean the idea that we can analyze an action that consists on its face of doing *x* because it was required by a past commitment, despite *preferring* to have done something else, as action in accordance with “preferences” after all, allowing for the second-order “preference to fulfill our commitments” and its ability to “quantitatively” override the first order preference to do something other than one’s duty.

For Arendt, the reason to keep a promise has nothing to do with expected future benefits: “without being bound to the fulfillment of promises, we would never be able to keep our identities; we would be condemned to wander helplessly and without direction in the darkness of each man’s lonely heart, caught in its contradictions and equivocalities—a darkness which only the light shed over the public realm through the presence of others, who confirm the identity between the one who promises and the one who fulfills, can dispel.” (958: 237) Promising lets us “keep our identities,” a backward-looking, and thus irrational, desideratum from the standpoint of rational choice theory, it would seem.

Similarly, a concern with narrative unity on the part of the actor will lead her to weigh in her decision what the rational actor would ignore as “sunk costs” (like the angel of history in the opening quote from Arendt’s remarkable friend, Walter Benjamin!). Elizabeth Anderson emphasizes this important implication of such a concern. She describes (Anderson, 1993, 34) a couple, who have established over a lifetime a successful family restaurant, contemplating selling it to a big chain and deciding not to sell because it “would leave them with life-stories as successful sell-outs.” She says: “Consequentialists view the couple’s reasoning as irrationally weighing sunk costs in their calculations. If a greater amount of future good can be achieved by taking up an entirely new path than it could by sticking with one’s past commitments and personal investments, one should disregard the past and take the option with the greater future payoff. If having alternatives to mass-produced commercialism in restaurants is a good thing, this

consideration counts in a calculation of future good, but ... should count no differently for a couple who had devoted their lives to promoting it than for a couple who judge that it is as good as the devotees say, but who had just come into the restaurant by inheritance. The meanings a choice confers on one's past actions are irrelevant to the future payoffs, which are by hypothesis the same in either case." (op. cit., 35) Anderson calls her alternative theory a theory of "expressive rationality"—as opposed to consequentialist rationality (with rational choice theory the major version of the latter sort of theory). It seems to me that the Arendtian actor can be usefully seen as expressively rational in Anderson's sense. Her actions are justified by the attitudes they express (this is one way of glossing the most characteristic description of action Arendt gives, namely, that it is self-disclosure, disclosure of who rather than what the agent "inescapably" is) and not by their consequences. (This doesn't mean that consequences don't count; it means that the way they count is structured by expressive norms. Obviously, one couldn't be expressing love for someone by taking actions whose consequences for the beloved are awful, for example).

Despite what has been said so far, it must be admitted that there is a great paradox at the heart of my argument in this section: Arendt over and over again ties action to the capacity to begin something new, to what she calls "natality." How then can it be argued that action is essentially backward-looking in *any* respect? In a minute I will quote Arendt from the very beginning of her career, in her dissertation on St. Augustine, exploring this paradox with great eloquence. I think the heart of the matter is that the actor, for Arendt, must forego sovereignty over her action: She is the subject of her story, but not its author. Her story will be told by others. She cannot fabricate the meaning of her words and speech. ("In other words, the stories, the results of action and speech, reveal an agent, but this agent is not an author or producer. Somebody began it and is its subject in the twofold sense of the word, namely, its actor and sufferer, but nobody is its author" (Arendt, 1958, 184).) In action, Arendt, says, we "disclose who we inescapably are:" It is thus bound to be governed by an expressivist, backward-looking logic, rather than the consequentialist, forward-looking logic that governs any sort of making or fabrication. In ways that we cannot control, we disclose ourselves in our action. And to disclose ourselves is to disclose something completely new that only came into existence with our birth.

Here is Arendt broaching these themes in her earliest work on Augustine: "The decisive fact determining man as a conscious, remembering being is birth or natality, that is, the fact that we have entered the world through birth. The decisive fact determining man as a desiring being was death or mortality, the fact that we shall leave the world in death. Fear of death and inadequacy of life are the springs of desire. In contrast, gratitude for life having been given at all is the spring of remembrance, for a life is cherished even in misery" (Arendt, 1996, 51). Here she is glossing Augustine, but it is not hard to see the roots of her later work. Decision theory treats people exclusively as desiring beings. We need a view of human agency that recognizes people as "conscious, remembering" beings as well. This, arguably, is what Arendt's theory of action does.

To act "for the sake of the world," in Arendt's sense, is to act neither selfishly nor selflessly. The Adam Smith problem, as traditionally conceived, sees a tension between *TMS*, where we are guided by "sympathy" and *The Wealth of Nations*, where we pursue our self-interest. I have argued that, like Arendt, Smith's view of agency in *TMS* fits neither picture, but is compatible with, and indeed can help to elucidate, Arendt's conception of action for the sake of the world; and that it is this rich picture of agency that is lost when we get to *The Wealth of Nations*. Rational Choice Theory inherits the "worldlessness" of *The Wealth of Nations* picture, unfortunately, and in doing so accepts and becomes complicit in the "subjectification" of the world that is the hallmark, for Arendt, and lamentably so, of the modern age.

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## ENDNOTES

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