THE RELATIONSHIPS BETWEEN SOCIAL CAPITAL AND ECONOMIC WELL-BEING – AN INDIVIDUAL LEVEL ANALYSIS

BY

SAIJUN ZHANG

DISSERTATION

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Doctoral Committee:

Associate Professor Steven G. Anderson, Chair
Associate Professor Mary Keegan Eamon
Associate Professor Min Zhan
Susan Farner, Ph.D.

ABSTRACT

Social capital refers to social networks, trust, and norms. This study distinguished between bonding and bridging social capital, and examined relationships between these two types of social capital and economic well-being at the individual level. Bridging capital was measured as engagement in activities of various voluntary organizations, and bonding capital was measured by networks of kin and friends. The study first examined the impact of individual bonding and bridging capital on future economic well-being, and then the impact of individual economic well-being on future bonding and bridging capital development.

The sample for the analysis included 3,198 non-student adults from the National Survey of Families and Households. Multivariate analyses indicated that: (a) individual bridging capital was positively associated with future economic well-being, but individual bonding capital was not; and (b) individual economic well-being was positively associated with future bridging capital development, but not with future bonding capital development.

The study has useful policy and practice implications. The findings suggest that poverty alleviation programs that integrate social capital as an essential element should focus on strategies to enhance bridging capital. On the other hand, policy makers and social service agents need to carefully consider potential financial barriers faced by low-income people when helping them to develop bridging capital.

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CHAPTER 1
INTRODUCTION

There has been increasing interest in social capital relevant research. Over the past decade, social capital has evolved into one of the most popular concepts across social science fields. In a search of social capital studies with the database "Social Science Citation Index" (SSCI), there were only 92 studies with a title including the phrase "social capital" in the decade from 1988 to 1997. However, the number jumped to 1,064 in the decade from 1998 to 2007, which was 11.6 times as many as that of the previous decade.

Social capital usually refers to social networks, trust, and norms. Social capital theorists claim that social capital has positive impacts on various aspects of societal life, such as economic well-being, health, crime rates, educational achievement, and adolescent development (Woolcock, 1998). The impact of social capital on economic well-being has been of particular research interest (Bordieu, 1986; Burt, 2000; Coleman, 1988; Hutchinson et al., 2004; Knack & Keefer, 1997; Lin, 1999a; Lin, 1999b; Putnam, Leonardi, & Nanetti, 1993; Woolcock, 1998).

In examining social capital effects, studies have focused on either individual level social capital or aggregate level social capital. An individual level social capital perspective views social capital as a personal belonging such as personal financial assets (Portes, 1998). In contrast, an aggregate social capital perspective views social capital as a collective belonging, such as the amount of social capital held at a community level or even a national level (Putnam, 2002). Conceptually, aggregate social capital implies that each person in a community or even a nation owns the same amount of aggregate social

capital, despite their individual variation. Therefore, aggregate social capital can be viewed as an important component shaping community or national social contexts.

Social capital theories also distinguish between bonding capital and bridging capital. Bonding capital mainly refers to networks of kin and friends in which people are more homogeneous in terms of their socioeconomic status, while bridging capital refers to networks of people with more heterogeneous backgrounds (Putnam, 2002). Social capital theories have claimed that bonding capital is critical in helping people, particularly poor people, to "get by" in daily life by offering emotional and material supports. In comparison, bridging capital is valuable in offering fresh information and other economically relevant resources, and hence is hypothesized to be effective in helping people "get ahead" (Briggs, 1998; Putnam, 2002). However, despite the theoretical claims regarding functional differences between bonding and bridging capital, few studies have empirically examined these issues using large-scale datasets.

Although the concept of social capital has aroused strong interest in both policy making and practice domains, factors affecting social capital accumulation have not been thoroughly investigated. Among the existing studies investigating such issues, the majority have focused on aggregate level social capital, have limited measures of social capital, or else have not applied multivariate analyses to disentangle economic well-being from other factors. In particular, none of the reviewed studies have investigated economic well-being and other factors affecting both bonding and bridging capital at the individual level.

This study distinguishes between bonding and bridging capital and examines relationships between these two types of social capital and economic well-being at the

individual level. Based on the concepts of bonding and bridging capital and previous empirical research, the study uses engagement in various voluntary organizations as the indicator of bridging capital, and uses four variables associated with networks of kin and friends to represent bonding capital. Personal income and income-to-needs ratio are used as primary indicators of economic well-being in this study. Controlling for other potentially influential factors, the study first examines the impact of current bonding and bridging capital on future economic well-being; next, the study examines the impact of economic well-being on future social capital accumulation.

The analysis is based on data from the National Survey of Families and Households (NSFH), a nationally representative longitudinal panel dataset which contains information allowing measurement of individual changes in economic well-being and social capital over time. The sample includes 3,198 non-student adults with non-missing values in the variables used for analyses. Ordinary Least Square regression models are applied to examine the impact of social capital on economic well-being, and vice versa.

The study has important theoretical, policy, and practice implications. The findings can provide empirical evidence concerning theoretical arguments about the functional difference between bonding and bridging capital, as well as evidence about factors affecting social capital development. This theoretical clarification is useful for policy making and social service practice. For example, knowledge about the impact of bonding and bridging capital on economic well-being can be useful in developing poverty alleviation programs, through focusing on development of social capital forms suggested by the research to be most promising. In addition, knowledge concerning factors affecting social capital development can inform policy makers and social service agents about

potential barriers to and facilitators of social capital development, and some of these factors may be amenable to program interventions.

Following this brief introduction, chapter 2 presents a literature review, which has four tasks: (a) introduce representative social capital definitions, theories, and intellectual origins; (b) explain the overarching conceptual distinctions between two pairs of concepts to be used in the study: aggregate social capital vs. individual social capital, and bonding capital vs. bridging capital; (c) discuss social capital measurements used in empirical studies; and (d) summarize previous empirical studies regarding the relationship between social capital and economic well-being. At the conclusion of chapter 2, I discuss limitations of previous studies, and then present research questions and related hypotheses to be examined in this study. Chapter 3 describes the dataset, sample, and case attrition issue. Chapter 4 focuses on the analysis of the impact of social capital on economic well-being, including sections of relevant variable introduction, methods of analysis, results, discussions, and implications. Chapter 5 focuses on the analysis of the impact of economic well-being on social capital, which follows the same structure as that of chapter 4. Chapter 6 concludes the study and points out limitations of the study and further research directions. Appendix section includes tables and figures referred to in the text.

CHAPTER 2
REVIEW OF LITERATURE

This chapter discusses social capital definitions and theories, social capital classification, social capital measurement, and previous empirical research examining relationships between social capital and economic well-being**.**

I. SOCIAL CAPITAL THEORIES AND MEASUREMENT

A. What Is Social Capital?

Although the concept of social capital in its contemporary meaning has been used by scholars since the 1960s (Woolcock, 1998), Bordieu (1986) is regarded as the founder of social capital theories because of his systematic interpretations. Bordieu defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition" (p. 248). This definition captures key features of social capital that have appeared in subsequent definitions as well, including networks, reciprocal norms, and social capital's function in facilitating future action. In particular, Bordieu (1986) raised the concept of social capital to a level paralleling economic capital and cultural capital. These three types of capital shaped Bourdieu's capital framework, which contains resources critical for individual action in a society.

Coleman (1988) is recognized as the first person to bring the concept of social capital to academic study in the United States. His classic study "Social Capital in the Creation of Social Capital" opened the door for later social capital empirical studies (Paldam, 2000; Portes, 1998). Coleman defined social capital as "a variety of entities with two elements in common: they all consist of some aspect of social structures, and

they facilitate certain actions of actors-whether persons or corporate actors-within the structure" (p. S98). Coleman's definition does not explicitly express what social capital consists of, but his further interpretation of this concept postulated that networks, norms, and trust are essential elements. For example, the "structure" in the definition refers to "relations between actors and among actors." Furthermore, the important meaning of norms in social capital is illustrated through an example in a Jerusalem city park, where unattended children can play alone because the local norms imply that they will be cared for by nearby adults.

Putnam's (Putnam, Leonardi, & Nanetti, 1993; Putnam, 1995a; Putnam, 2002; Putnam, 2007) studies of social capital have greatly triggered the current popularity of this concept. According to Putnam, social capital refers to "features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit" (p 35). This explicit treatment of trust, norms, and networks as essential elements of social capital has been incorporated in most subsequent social capital definitions. Networks have particularly high weight in the definitions provided by Putnam and many others. For example, Putnam (2007) later presented his social capital definition as "social networks and the associated norms of reciprocity and trustworthiness," and simplified his social capital ideas to these words: "like tools (physical capital) and training (human capital), social networks have value" (p. 137). Unlike Bordieu (1986) and Coleman (1988), who considered social capital mainly as an individual belonging similar to personal wealth, Putnam viewed social capital primarily as a collective belonging of a community or even a nation. Putnam's emphasis on aggregate social capital has been interpreted as suggesting that he considers social capital

solely as an aggregate entity (Paldam, 2000). However, he has acknowledged that social capital can be both an individual level belonging and an aggregate level belonging (Putnam, 2002).

Some social capital theorists have agreed that social networks are critical in comprising social capital, but they have argued that the examination of social capital should focus on the resources contained within the networks, rather than on the networks themselves (e.g., Lin, 1999a; Lin, 2001; Nahapiet & Ghoshal, 1998). For example, Nahapiet and Ghoshal defined social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (p. 243). Despite these definitional varieties, there is a general consensus that social capital refers to trust, norms, and networks, and networks are generally viewed as the foundation of trust and norms.

B. The Intellectual Roots of Social Capital Concept

Portes and Sensenbrenner (1993) generalized four types of economically relevant expectations related to social capital, and traced their intellectual sources to classic sociological theories: value introjection, reciprocity transactions, bounded solidity, and enforceable trust. According to Portes, value introjection is derived from socialization theories, which treat human being's adaptation and development in a society as a process of learning and assimilating social values. Reciprocal transactions are based on social exchange theories, which suggest that social behaviors are based on underlying reciprocal norms. Value introjection and reciprocity jointly form the intellectual underpinnings of norms, which is a key element of the social capital concept. The intellectual foundations of social networks derive from bounded solidity theories, which suggest that individuals

in common environments are more likely to establish connections, form consensus, and develop group-oriented behaviors. Finally, the intellectual sources of trust stem from enforceable trust, which means group members have confidence in reciprocal norms and would like to sacrifice their current benefits with the anticipation of future market returns.

Many social capital theorists, including Putnam and his colleagues (1993), have defined social capital as a combination of all or part of the elements of trust, norms, and social networks. These definitions have aroused several criticisms. First, some researchers are concerned that the social capital concept lacks a consistent definition, because some definitions target ties and norms that connect individuals, while others target more subjective aspects such as trust (Woolcock, 1998). However, such definitional varieties may not be a serious issue. In social science, concepts often need relative flexibility to fit various contexts while maintaining their overarching capacity, which results in definitional varieties. For example, the concept of "class" is widely accepted in social science, but the definitions often vary significantly and can include both objective indicators such as income and education levels, as well as subjective indictors such as job reputations.

Another major concern is that many social capital definitions mix the infrastructure and contents of social networks. Social networks are often treated as an infrastructure that produces trust and norms. Some researchers view the mixture of networks, trust, and norms in a definition as unfavorable, because it seems to confuse the sources and outcomes of social capital (Woolcock, 1998). This concern is not unique to social capital, as other general social science concepts have included elements of "infrastructure" and "products," such as the concept of "assets", which can cover both ownership of real estate

and the rental revenues generated from real estate. Furthermore, it may be an oversimplification to treat social networks as "infrastructure" and trust and norms as "products," because the latter are also likely to affect the former.

C. Bonding Capital and Bridging Capital

The concepts of bonding capital and bridging capital are useful in analyzing functional differences in social capital. Triggered by Putnam's (1995b) argument that social capital has a bridging feature, Gittell & Vidal (1998) first differentiated the concepts of bonding capital and bridging capital. They defined bonding capital as networks in which people are familiar with each other, while bridging capital as networks in which people did not know each other previously. Putnam (2002) further refined this pair of concepts based on differences in group members' socioeconomic backgrounds: "bonding capital brings together people who are like one another in important aspects (ethnicity, age, gender, social class and so on), whereas bridging capital brings together people who are unlike one another" (p. 11). Putnam also argued that bonding capital was largely inward looking, and aimed at promoting interests within group members. In contrast, bridging capital was considered to be outward looking, and took both private and public interests into account.

Although Putnam agreed that bonding capital was critical for individual social support, he was concerned that strong bonding ties without linkage to external society may impose negative impacts on the social good. Putnam also pointed out that most groups had a mixture of bonding and bridging capital. For example, a group consisting of people from diverse socioeconomic backgrounds is likely to carry bridging features. However, if its members are limited to a certain ethnicity, then this group may also

contain bonding features. Some researchers have used different terms to refer to this pair of concepts. For example, Briggs (1998) used "social support" capital and "leverage" capital to represent bonding capital and bridging capital, respectively (Putnam, 2002). Regardless of the terms used, however, the basic distinction between these two social capital forms seems reasonably clear in the literature.

The processes through which these two social capital forms are expected to impact people are quite different. Bonding capital is viewed as critical for people to get by in their daily lives, because it can provide emotional and material supports to meet daily life needs. However, because people in these networks are similar in their economic and social backgrounds, bonding capital is less likely to provide new information and resources helpful in economic advancement, such as finding a job (Briggs, 1998; Putnam, 2002). On the other hand, bridging capital extends social networks to people with diverse social and economic backgrounds, which is more likely to transmit important information for people that could improve their economic status, and hence to get ahead (Briggs, 1998).

In empirical research, bonding capital is often measured through networks with kin and friends, because people within this type of networks are more likely to have similar social and economic backgrounds (Barnes, 2003; Beugelsdijk & Smulders, 2003; Briggs, 1998). In comparison, bridging capital is often measured through affiliations with various voluntary group organizations, because these organizations are more likely to include people with diverse social and economic backgrounds (Barnes, 2003; Beugelsdijk & Smulders, 2003; Putnam, 2002). I will return to the measurement of social capital in more details later.

D. Individual Social Capital and Aggregate Social Capital

Individual social capital views social capital as a personal belonging, and uses measures such as the size of individual social networks to gauge his/her stock of social capital. In contrast, aggregate social capital views social capital as a collective belonging of a community or even a nation; it thus serves as a kind of societal context in which people are embedded.

There have been debates about whether social capital should be viewed primarily in aggregate versus individual modes (Woolcock, 2001). However, this issue has been largely resolved by Putnam (2002), who initiated the application of aggregate social capital. Although his empirical research nearly exclusively treats social capital as an aggregate entity, Putnam later argued that social capital has both individual and aggregate features. Individual level social capital benefits its owners directly, such as by assisting one in finding a job through personal networks. Aggregate social capital is the collection of individual social capital in a community or nation, which in turn can benefit everyone in these environments regardless of individual variances in social capital stock (Putnam, 2002).

Due to the widespread influence of Putnam's research, social capital empirical studies have mainly focused on aggregate social capital (Fukuyama, 1995; Knack & Keefer, 1997; Narayan & Pritchett, 1999; Putnam et al., 1993; Robison & Siles, 1999; Whiteley, 2000). Such aggregate measurements usually involve averaging individual social capital. For example, a community's trust level can be obtained through averaging the trust level of each resident within the community (Paldam, 2000). It is also worth noting that individual and aggregate social capital may be measured by different proxies.

For example, the legal system is viewed as an important aspect of aggregate social capital in a nation, but it generally would not be treated as individual social capital (Paldam, 2000). Glaeser, Laibson, and Sacerdote (2002) have pointed out that the concentration of research on aggregate social capital has resulted in inadequate attention to relationships between social capital and economic well-being at the individual level, which they viewed as critical to understanding the effects of aggregate social capital.

E. Measurement of Social Capital

Largely due to varying definitions of social capital, the proxies used to measure social capital vary significantly. The clarification of measurement therefore is critical in understanding what social capital refers to in a specific study, as pointed out by Narayan and Pritchett (1999) "[w]e cannot examine the effects of what we mean by social capital, only the effects of what we measure" (p. 875).

There are two main sources that contribute to the variations in social capital measurement. The first pertains to the multiple dimensions of social capital. That is, social capital typically is seen as including key elements of trust, norms, and networks; each of these, or the combination of them, can be viewed as social capital. For example, using data from the General Social Survey (GSS) and the Election Data Book, Rosenfeld, Messner, and Baumer's (2001) measurement of social capital included trust (represented by interpersonal trust), networks (represented by group memberships), and civic norms (represented by election participation). In comparison, although Kawachi, Kennedy, Lochner, and Prothrow-Stith (1997) also used data from the GSS, their social capital measurement only included trust and social networks. Furthermore, some studies rely solely on social networks to measure social capital. McDonald's (2005) use of personal

networks for job search to represent social capital provides an illustration of this approach.

The second source of measurement variations is due to the diverse proxies used to represent each dimension of social capital. This is clearly demonstrated in the measurement of social networks. For example, Coleman (1988) considered social capital mainly in terms of inside and outside family social networks. The inside family social networks were measured through proxies such as the number of siblings, family structure, and time spent with children; the outside family social networks were measured through proxies such as the number of family moves, school characteristics, and religious service attendance. In contrast, Paxton (1999) used voluntary group memberships, along with social activities such as spending social evenings with friends or neighbors, to represent social networks.

This use of diverse proxies is reflected in the measurement of trust and norms as well. For example, although using the same GSS dataset, Brehm & Rahn (1997) used interpersonal trust and trust in government to represent trust, while Paxton (1999) used interpersonal trust and trust in government and other institutions (e.g., religion and education) as indicators of trust.

To present a more visualized picture concerning social capital measurement variations, I constructed Table 1 to illustrate the proxies used to represent social capital concepts in selected empirical studies. This table only includes studies using large-scale secondary datasets, in order to make the proxies more comparable. The first row lists studies using the social capital concept, while the second row lists datasets used in each specific study. The first column shows proxies used in these empirical studies, and the

crossing marks (×) in each following column indicate the proxies included in a specific study to represent social capital. For example, in Brehm's (1997) study, group membership, trust in individuals, and trust in institutions were used to represent social capital. In contrast, Kim's (1998) study used social activities, perceived support under emergency situations, and group memberships to represent social capital. The scattered distribution of crossing marks across these different studies demonstrates the substantial measurement variations across studies.

There also have been efforts to construct comprehensive indices to represent social capital. For example, Putnam (1995a) constructed a 14-variable index of social capital, including various social connections and activities such as community involvement and voluntary participation, civic affairs engagement, informal sociability, and trust. Due to the limitation of available datasets or because of particular research concerns, most empirical studies have examined only subsets of these variables. Nonetheless, focusing on limited proxies of social capital does not necessarily suggest serious limitations in social capital research. Furstenberg Jr. and Hughes (1995) have pointed out that social capital is a broad concept represented by many different proxies, which may generate quite different impacts on economic and other outcomes. It is therefore reasonable for a specific study to focus only on limited aspects of social capital.

II. THE IMPACTS OF SOCIAL CAPITAL ON ECONOMIC WELL-BEING

A. Theoretical Perspectives

Research has suggested that various dimensions of social capital affect economic well-being in different ways. Trust and norms are widely believed to have the effect of reducing transaction costs and facilitating economic activities (Fukuyama, 1995; Knack

& Keefer, 1997), while social networks are often viewed as important channels for conveying information and resources critical for economic activities (Burt, 2000; Granovetter, 1973; Lin, 1999a; Seibert, Kraimer, & Liden, 2001). In addition, social networks are often viewed as an important source for generating trust, which in turn is beneficial for economic activities (Granovetter, 2005; Putnam, 2002; Putnam, 2007; Torsvik, 2000).

Research examining social capital's impact on economic well-being can be categorized into two schools, according to whether social capital is treated as an individual or aggregate entity. These two schools originated primarily from the research fields of sociology and political science, respectively. I will detail these theoretical perspectives below.

(a) Social capital's impact on economic well-being - sociological perspectives

Selected aspects of social capital have long been a research focus in sociology, and many of the prominent social capital theorists such as Bordieu (1986) and Coleman (1988) are from the sociological research field. Bordieu (1986) suggested that social capital could be transferred into economic capital with some effort. This point has been widely accepted by later social capital researchers, and has been supported by many empirical studies.

Sociologists generally view social capital as a critical element in shaping social contexts, which in turn contributes to economic well-being. According to Portes and Sensenbrenner (1993), sociologists' interest in social capital emerged from a reexamination of classical economic theories. Such economic theories assume that each individual is economically rational, and that their economic behaviors are based on the

principles of maximizing utilities and minimizing costs. However, sociologists view this assumption as unrealistic, because it does not take social contexts into account. Instead, they deem economic actions as being embedded in social contexts, in which social networks play a fundamental role. Social networks are termed as social capital, because they are argued to have traits similar to other capital forms: they can be stocked and used to facilitate economic activities (Portes & Sensenbrenner, 1993).

In sociology, the concept of social capital in many studies actually refers to social networks, and the impact of such networks on economic well-being has been widely studied. Social capital theorists (e.g., Granovetter, 2005; Lin, 1999a) argue that social networks affect economic well-being in three principle respects. First, they help to deliver valuable information, because information communicated through personal interactions is more accessible and more trustful. Second, they help maintain good market order through reward and punishment mechanisms such as group exclusion or reputation recognition. Finally, they foster trust, which reduces transaction costs and facilitates economic actions. Trust and norms also are often used as indicators of social capital independently when examining their impacts on economic well-being (Knack & Keefer, 1997; Whiteley, 2000).

Sociological theories also have tried to understand how different types of social capital may affect economic well-being. For example, Granovetter (1973) initiated the concept of weak ties versus strong ties. Weak ties are interpersonal relationships characterized by fewer contacts frequency and less emotional involvement, when compared with strong ties. The theory of weak ties and strong ties is viewed as the conceptual basis of bridging and bonding capital (Putnam, 2002). Burt (1992) applied

structure hole theory to suggest that people with broad networks have advantages in economic achievement. Structure holes refer to the disconnection status of two persons or groups in a network map. According to the theory, people who have more bridges over those otherwise disconnected persons or groups have more access to fresh information and valuable resources containing economic potential. Among social capital theorists, some other sociologists such as Lin (1999b) focus more on the resources contained in social networks, as opposed to the distinction of different types of social networks. They have argued that regardless of whether ties are "weak" or "strong," they may or may not have valuable information or resources attached to them.

In summary, sociological research has been more concerned with individual level social capital, and generally has consistently argued that social capital can contribute to economic well-being. Some theories such as "weak ties" have examined the functional differences between different types of social networks, which has paved the way for later conceptual distinctions between bridging capital and bonding capital. Burt's structure hole theory further was used to suggest that social capital with larger bridging capacities spanning otherwise scattered smaller networks can offer more access to valuable information and resources. Finally, scholars such as Lin (1999a), have further theorized about how resources embedded in social networks contribute to economic activities. These theories and related empirical studies have provided solid foundations for the later thriving development of social capital research represented by Putnam and many others across social science fields.

(b) Social capital's impact on economic well-being - political science perspectives

Social capital research in political science is mainly represented by Harvard political scientist Robert Putnam. He initiated the approach of treating social capital as an aggregate entity, which distinguished him from most sociological theorists who treated social capital mainly at the individual level. His perspective that social capital is a social good, and his initiative of viewing social capital as an aggregate entity, have spread widely into other social science fields, and have largely stimulated the explosion of social capital research.

Putnam's perspectives regarding social capital impacts on economic well-being have undergone two principle stages. The first stage is mainly exemplified in the study "Making Democracy Work: Civic Traditions in Modern Italy" (Putnam et al., 1993). Putnam and his colleagues concluded that higher levels of social capital in northern Italy, represented by residents' higher participation rates in voluntary groups, were the key contributing factors to better regional economic performance when compared to southern Italy. As indicated in Figure 1, this study depicted a pathway of social capital impact on economic well-being: higher stocks of social capital promoted people's collective action, which resulted in a more democratic society and better government performance. This in turn was argued to foster better economic performance.

Later in his social capital research, Putnam (2002) presented another pathway predicting social capital's impact on economic well-being. He argued that dense social networks are critical in fostering reciprocal norms and trust, which can facilitate collective action by reducing transaction costs and in turn result in better economic performance (Figure 2). This idea is very similar to major sociological perspectives

concerning the importance of trust in reducing transaction costs, except that Putnam treated social capital at the aggregate level.

B. Empirical Evidence

This section will review empirical findings about the impacts of social capital on economic well-being. Although the current study does not include aggregate social capital in the analysis, I nonetheless will include aggregate social capital in this review. Aggregate social capital is closely associated with individual social capital, and understanding its impact on economic well-being therefore is important in the broader context of this study.

(a) The impact of aggregate social capital on economic well-being

Many studies have found that aggregate social capital, represented by trust, norms, and networks separately or jointly, is positively associated with economic achievement at community or national levels. For example, Putnam et al.'s (1993) study found that higher levels of community social capital encouraged civic engagement, which promoted regional economic development in Italy. Using data from the World Values Surveys, some researchers found that national trust and civic norms were positively associated with GDP development (Knack & Keefer, 1997; Whiteley, 2000), and others found that nations with higher levels of trust were more likely to have higher investment rates (Zak & Knack, 2001). Studies also have found positive economic effects of community level social capital within countries. For example, Robison and Siles (1999) defined social capital as the combination of family integrity, educational achievements, crime rates and labor force participation, and examined its relationship with household income. Using U.S. Census data, they found that state level social capital was positively associated with

household income, and negatively associated with household income disparity. Narayan and Pritchett's (1999) study in rural communities similarly indicated that community level social capital had a significant impact on family income. The social capital used in that study was mainly represented by an index measuring the number and characteristics of organizations in which respondents were included, as well as the frequency of respondents' participating in the activities of these organizations. The findings indicated that a one standard deviation increase in community level social capital corresponded to a 20 to 30 percent income increase for the residents. In addition, Guiso, Sapienza, and Zingales (2004) found that higher regional social capital was associated with people's financial management activities, such as a higher likelihood of using checks, greater accessibility to institutional credit, and higher investments in stocks.

(b) The impact of individual social capital on economic well-being

At the individual level, studies mainly have focused on the impact of individual level social capital on job search and career development. For example, Loury (1981) found that poor black families had disadvantages in offering material supports and information networks for the job search of their adult children. Reingold (1999) used data from the Urban Poverty and Family Life Survey to examine job search channels of people aged 18-47 years living in poor Chicago communities. The results indicated that black males were more likely to find a job through personal networks than males of other races, suggesting the importance of social capital for this population. Furstenberg and Hughes (1995) used a 20-year longitudinal dataset of a group of children of teenage mothers in Baltimore to examine the impact of social capital on children's economic attainment. The individual level social capital was measured through various inside

family relationships and outside family connections, and the economic attainment was indicated through a combination of measures on educational achievement and employment status. The analyses indicated that selected individual level inside family relationships and outside family connections were positively associated with children's economic attainment.

Only a few studies in the U.S. have used nationally representative datasets to examine the effects of individual social capital on income and other measures of well-being. For example, Durkin (2000) used data from the GSS to examine whether individual voluntary group memberships and social interactions such as help from relative and friends for household work, money borrowing, advice, and emotional support, affected wages. His study found that social interactions with family members and friends were positively associated with wages in certain groups.

(c) Bridging and bonding capital's impact on economic well-being

Although many existing studies have investigated the impact of social capital on economic well-being, they generally have not distinguished between bonding and bridging capital. Among the few studies that have, only Briggs (1998) examined the differentiated effects of bonding capital and bridging capital on economic well-being at the individual level. This study used a sample of residents of a New York public housing program to investigate social support capital (bonding capital) and social leverage capital (bridging capital). The study used three questions to indicate social support capital: (1) daily aid such as getting rides, borrowing a little money, or running errands; (2) emergency aid for a serious illness or providing temporary accommodation; and (3) finding someone to talk to about family relationship troubles. Networks of kin and friends

were regarded as the major carriers of this social support capital. Three different proxies were used to indicate social leverage capital that helped people to "get ahead": (1) job information; (2) advice on future plans; and (3) advice on school classes or programs. Networks of people with heterogeneous backgrounds were deemed to be the major carrier of this type of social capital. The study found that black adolescents with higher levels of social leverage capital, such as networks including white people, had more perceived job information. Unfortunately, a high proportion of these black adolescents lacked such leverage capital.

Beugelsdijk and Smulders' (2003) study distinguished between the economic impacts of bonding and bridging capital at the aggregate level. The study measured the aggregate bonding and bridging capital of 54 European regions. Bridging capital was represented by memberships in a series of voluntary organizations resembling those analyzed by Putnam (1995) and Knack and Keefer (1997), including memberships affiliated with religion, education, arts, music, cultural activities, and youth work. Bonding capital was represented by ties with family, friends, and acquaintances. The results indicated that bridging but not bonding capital was positively associated with regional economic growth.

Some studies have employed measures similar to those used in the Briggs (1998) and Beugelsdijk and Smulders' (2003) studies, although they have used concepts other than bonding and bridging capital in framing the research. For example, using data from the Italian National Institute of Statistics and other sources, Sabatini (2008) examined the impact of four types of regional level social capital (strong family ties, networks with kin and friends, voluntary group affiliations and activities engagement, and political

participation) on human development and other well-being. The index of human development in this study consisted of per capita income, life expectancy, and high school attendance. The study found that the level of voluntary organizational affiliations at the regional level exhibited a positive impact on human development. In contrast, strong family ties and networks with kin and friends actually showed negative effects on human development, although they did improve life quality by reducing worker instability. Using data from the Women's Employment Survey, Henly, Danziger, and Offer (2005) examined the impact of perceived social supports on the economic well-being of single mothers with TANF experience. The social supports investigated, such as engaging relatives and friends in helping with errands, childcare, emotional support, and money borrowing, fit the concept of bonding capital well. The findings suggested that, although the social supports did not show a significant impact on monthly income or job quality, they reduced the likelihood of living in poverty and experiencing hardships in housing, food, or medical care among study participants. Lombe and Ssewamala's (2007) study investigated the impact of informal social networks on micro-savings outcomes. The study defined three types of informal social capital: community involvement indicated by activities such as election participation, giving help to kin and friends, and receiving help from kin and friends. The results showed that community involvement and receiving help did not affect respondents' saving activities, but giving help was negatively associated with saving activities.

In summary, this review of previous empirical studies generally suggests that at both the individual level and aggregate level, bridging capital shows a positive impact on economic well-being, while bonding capital rarely does. The review also indicates that

researchers have used ties with kin and friends to represent bonding capital, and have used affiliations with various organizations to measure bridging capital. This study will follow this measurement principle in constructing variables representing bridging and bonding capital.

III. THE IMPACT OF ECONOMIC WELL-BEING ON SOCIAL CAPITAL

A. Theoretical Perspectives

Social capital theories generally agree that social capital and economic capital can affect each other. This is explicitly indicated in Bordieu (1986)'s theory of capital frameworks, which consists of economic, cultural, and social capital. According to Bordieu, each of these three capital forms can transfer into other capital forms under certain conditions. However, Bordieu did not weigh these three capital forms equally; he deemed economic capital as the foundation of the other two capital forms. In fact, he even viewed social capital and cultural capital as disguised economic capital: "so it has to be posited simultaneously that economic capital is at the root of all the other types of capital and that these transformed, disguised forms of economic capital, never entirely reducible to that definition" (p. 288).

Some other scholars have agreed that the development of social capital requires investment, but do not tie individual financial capacity to such investment needs. For example, Lin (1999a; 2001) viewed social capital as a kind of investment in social networks that can generate future market values, but did not state explicitly that such investment requires financial resources. Other scholars have viewed social capital accumulation as a process independent of economic resources. For example, Light (2004)

argued that, compared with other capital forms, social capital is most accessible for poor people because it does not require economic and other resources.

Most other social capital studies have been more interested in examining the effects derived from social capital, without paying adequate attention to factors affecting social capital accumulation. The issue of whether social capital accumulation requires economic resources is simply omitted. However, because social capital accumulation has been a policy concern and is widely valued in community development programs, it is important to understand the extent to which economic resources and other factors may impact social capital development.

B. Empirical Research Regarding the Impact of Economic Well-being and Other Factors on Social Capital

Some studies have used large datasets to examine the impact of economic well-being on social capital development at either aggregate or individual levels. However, individual economic well-being usually has not been the primary concern of these studies, and the findings regarding it are mixed.

Most of the quantitative analyses concerning the impact of economic well-being on social capital have been targeted aggregate level social capital. For example, Putnam's (1995a; 1995b) influential research about the declining social capital in the U.S. used data from the GSS to compare social capital developmental trends among groups with different levels of income. Social capital was measured by trust levels and the amount of voluntary group memberships. The findings indicated that, although both measures of social capital had declined over time for all income groups, the decline was sharper among affluent people when compared to medium and low income people. He therefore

concluded that income was negatively associated with social capital decline over time. However, this result did not control for other factors that may contribute to social capital development.

Some later studies applying multivariate analysis have yielded mixed results in terms of the impact of economic well-being on social capital. For example, Boisjoly, Duncan, and Hofferth (1995) used data from the Panel Study of Income Dynamics (PSID) to examine access to social capital of families with children. Social capital in this study was measured using two questions that asked whether the family could count on their friends or relatives to provide time and money support in emergency situations. The multivariate analyses found that family income-to-needs ratios were not associated with access to social capital. However, the study also found that neighborhood poverty levels, measured by the percentage of families living below the poverty line, were negatively associated with family access to this kind of social capital. In contrast, using data from the Urban Poverty and Family Life Survey of Chicago, Barnes (2003) found that neighborhood poverty levels generally did not affect individual social capital, such as participating in activities of block clubs, political parties, PTA or schools groups, social clubs, or church related groups. Similarly, Alexander (2007) investigated the impact of state level factors on social capital development over time. This study was based on Putman's (1995a) study, in which the social capital index consisted of a series of social, civic, and political engagement indicators. The study found that state poverty levels and income (ln) did not affect state level social capital, although other state level economic related factors such as the percentage of farmers showed a positive impact.

Some other multivariate studies have found that economic well-being shows a positive impact on social capital. For example, Alesina and La Ferrara (2000) study used data from the GSS to investigate factors affecting social capital at both individual level and aggregate levels. Social capital in this study was measured by a dummy variable, which indicated if a person was affiliated with at least one of the voluntary organizations included in the surveys. The study found that individual income was positively associated with social capital. At the aggregate level, income inequality (measured by the Gini index) in Metropolitan Statistical Areas had a negative impact on the measured social capital.

Other studies have found mixed impacts of economic well-being on social capital at different time periods. For example, using a series of national datasets, including data from the U.S. Census Bureau during the two time periods of 1980-1990 and 1990-1997, Rupasingha, Goetz, and Freshwater (2006) conducted multivariate analyses to investigate factors affecting county level social capital. One measure of social capital was the density of the number of the following establishments in a county: civic organizations, bowling centers, golf clubs, fitness centers, sports organizations, religious organizations, political organizations, labor organizations, business organizations, and professional organization. These were used as a proxy of connection chances in a community. The findings suggested that family income had a positive impact on county level social capital during the period of 1980-1990, but a negative impact during 1990-1997.

Some of the aforementioned multivariate studies also have examined other factors affecting social capital stock either at aggregate level or individual level, including age, race, education, marital status, children at home, mobility, and region (Alesina & La Ferrara, 2000; Alexander, 2007; Barnes, 2003; Boisjoly et al., 1995; Putnam, 1995b;

Rupasingha et al., 2006). Many of these factors have shown mixed impacts on various social capital measures.

Some descriptive studies also have examined the impact of economic well-being on individual social capital development. For example, Briggs' (1998) study of a New York housing program found that low-income black people often lack necessary links to people of higher socioeconomic status, which is critical to them in obtaining job information. Middleton, Murie, and Groves (2005) interviewed 1,001 subjects in several England communities to examine the relationship between individual social capital and social and economic status. The findings suggested that poor people perceived great financial barriers in developing bridging capital when compared with people of higher social and economic profiles, because such bridging capital development often relied on economic resources. For instance, low-income people were reluctant to attend sport clubs useful for bridging capital development, because they could not afford sports equipment and other costs. Das' (2004) qualitative study in India examined the impact of the social economic status of poor workers on their social capital condition. The findings suggested that although reciprocal interactions among poor families in the communities were common and frequent, the interactions between poor families and middle income and economically advantaged families were rare. Hutchinson (2004) found that, in a Los Angeles community lacking trust and safety, it was hard for poor people to establish bridging capital with people of better social economic status. The community had been a place mainly occupied by affluent people, but later evolved into a hotbed of drug dealing and violence after many original residents moved to suburban areas. The prevalence of violence and crime in this community made it very difficult for people of different social

and economic backgrounds to establish interactive relationships. Although these descriptive studies provide insight about the effect of economic status on social capital, one major limitation is that they cannot disentangle economic factors from other influential factors in examining the impacts on social capital development.

In summary, empirical evidence regarding the impact of economic well-being on social capital is mixed. Some studies have reported that income or poverty levels, measured either at aggregate levels (Alexander, 2007) or individual levels (Barnes, 2003; Boisjoly et al., 1995), do not affect social capital. In these studies, the forms of social capital under examination usually correspond to bonding capital (Boisjoly et al., 1995) or to the combination of both bonding and bridging capital (Alexander, 2007). However, some studies have suggested that at the individual level, economic well-being is an important factor that deters low-income people from establishing bridging capital with people of higher social and economic status (Briggs, 1998; Das, 2004; Middleton et al., 2005).

IV. LIMITATIONS AND RESEARCH QUESTIONS

In this section, I will discuss the limitations of existing research regarding the relationships between social capital and economic well-being, and will present my hypotheses that are intended to address some of these limitations.

A. Limitations of Existing Studies

A limitation in the existing literature has been the relative lack of individual level social capital research. Although individual level social capital is viewed as the basis of aggregate social capital (Glaeser et al., 2002), and this concept has clear theoretical foundations (Portes, 1998; Woolcock, 2001), very limited studies have focused on the

effect of individual level social capital on economic well-being (Boisjoly et al., 1995; Glaeser et al., 2002), which is an area worth in-depth exploration (Glaeser et al., 2002).

Studies to date also have been affected by limitations in data. For example, very few studies have used nationally representative datasets to examine the impact of individual social capital on economic well-being, which is critical to developing general inferences regarding this impact. In addition, no studies have used nationally representative datasets to examine the differentiated impacts of bonding and bridging capital on economic well-being.

Another largely overlooked area in social capital research concerns understanding the impact of economic well-being on the development of social capital. A few quantitative studies have examined factors affecting social capital development, but the measures of social capital usually have been at the aggregate levels, and distinctions between bonding and bridging capital have been absent. In addition, the quantitative studies reviewed generally have used the GSS dataset, which is not a panel study and therefore does not allow the tracking of individual changes over time. The few studies investigating factors affecting social capital at the individual level have been primarily descriptive in nature, and have used small-scale locally collected datasets. Consequently, it has not been possible to disentangle the impact of economic well-being from other factors such as education and race.

B. Research Hypotheses

Social capital theories and existing empirical studies suggest that social capital, measured in various ways, generally has a positive impact on economic well-being at both the aggregate level and individual level. However, research to date has not clearly

differentiated the effects of bonding capital and bridging capital on economic well-being. On the other hand, findings from previous studies regarding the effects of economic well-being on social capital are mixed. I have been most influenced by several individual level studies that suggest individual economic status does not affect bonding capital development, but is positively associated with bridging capital development (Briggs, 1998; Das, 2004; Middleton et al., 2005). This study focuses on the relationships between social capital and economic well-being at the individual level. More specifically, this study tests the following hypotheses.

Hypothesis 1: bonding capital is not associated with future individual personal income and income-to-needs ratios (Figure 3).

Hypothesis 2: bridging capital is positively associated with future individual personal income and income-to-needs ratios (Figure 3).

Hypothesis 3: individual income is positively associated with future bridging capital (Figure 4).

Hypothesis 4: individual income is not associated with future bonding capital (Figure 4).

Figure 3 and Figure 4 illustrate multivariate analyses to be conducted to test economic well-being or social capital. Factors at the left of the arrow lines are independent variables and control variables used to predict dependent variables. The plus sign (+) and minus sign (-) indicate the hypothesized positive and negative impacts of independent variables or control variables on the dependent variables.

CHAPTER 3
DATA AND SAMPLE

In this chapter, I first introduce the data and sample for this study, and then discuss the case attrition issue between the two waves of data used.

I. DATA AND SAMPLE

Data used in analysis are from the NSFH wave 1 (1987-1988) and wave 2 (1992-1994). NSHF is a longitudinal panel study. Wave 1 interviewed 13,017 randomly selected noninstitutionalized adults aged 19 and over, and wave 2 contains follow-up interviews with 10,007 respondents from the first wave.

This dataset suits the purpose of the study especially well. It includes social capital indicators that can be used for the measures of both bonding and bridging capital, as well as individual income and income-to-needs ratio variables for the representation of individual economic well-being. Compared with the General Social Survey (GSS), which is widely used in social capital research, NSFH has several advantages with respect to social capital measures. In both GSS and NSFH, respondents were asked about their affiliations with a series of voluntary organizations; the organizations questioned about in both datasets were nearly the same. However, in the GSS, the questions only asked respondents if they were members of these organizations. In the NSFH, respondents were asked about the frequencies with which they attended activities of these organizations, which allows the measurement of the strength of respondent affiliations.

Another major advantage of the NSFH is its panel survey nature. In this study, I use two waves of the NSFH administered about five years apart. The panel design allows this

study to trace changes in economic status and social capital stock over time among identical individuals.[1]

Only non-student primary respondents who were interviewed at both waves and were aged 19-59 at wave 2 are included in the analyses. Such restrictions allow appropriate comparisons among subjects in terms of social capital impacts on economic well-being, because these respondents were more likely to be at the employment stage. A total of 3,248 respondents met these criteria without missing values on any of the variables used for analysis. In addition, 50 cases that reported zero family income were excluded due to reporting errors. The final sample therefore consists of 3,198 cases.[2]

II. CASE ATTRITION ISSUE

The NSFH wave 1 includes 13,107 main respondents, and the wave 2 follow-up interviews include 10,007 of the original respondents. About 76% respondents interviewed in wave 1 remained in wave 2 interviews, indicating an attrition rate of 24%. The drop-out cases between wave 1 and wave 2 interview may result in underestimates or overestimates of model coefficients, if the drop-out cases differed systematically from those who completed wave 2 interviews. To estimate the coefficient bias possibility, I compared characteristics of respondents in the sample with those who dropped out after the wave 1 interview. The same criteria (aged between 19 and 59, were non-student, no missing values in the variables intended for analyses) used to select the sample were applied to determine respondents who dropped out. Applying these criteria, 1,194 cases

[1] NSFH also released a wave 3 dataset containing interviews conducted in 2001-2002. Due to funding reductions, this wave only included primary respondents whose families had a focal child selected for interview at wave1.The wave 3 sample would be less representative for the purpose of this study. Therefore, this study only uses data from wave1 and wave2.

[2] The inclusion of the 50 cases with error 0 income report will result in outcomes changing from significant at alpha<.05 level to nonsignificant when predicting the impact of bridging capital on economic well-being as stated in the later analysis.

were determined. Adding these cases to the sample size of 3,198, the total sample for this study would be 4,392 if those dropping out remained in wave 2 interviews. Therefore, the case attrition rate was 27%, which was a little higher than the overall case attrition rate between wave 1 and wave 2.

I conducted T-tests for continuous variables and chi-square tests for categorical variables between the sample cases and those cases that otherwise would be in the sample but dropped out at wave 2 (results not shown). The analysis indicates that the two groups had some different features. The sample group had higher levels of social capital, including bridging capital and various forms of bonding capital except social activities. The sample cases also showed higher personal and spouse/partner income. In addition, they were more likely to be aged 25 - 44 non-Hispanic white; female; highly educated; married; to have at least one child; to be employed; to have better perceived health status; and less likely to have family histories of receiving public assistance. Overall, the sample cases therefore seem to somewhat better off than drop-out cases in terms of several social and economic characteristics.

CHAPTER 4
ANALYSIS OF THE IMPACT OF SOCIAL CAPITAL ON ECONOMIC WELL-BEING

This chapter includes the following sections: description of variables used for the analysis of the impact of social capital on economic well-being; methods used for the analysis; results presentation; discussions of the results, and implications for policy and practice.

I. VARIABLES

In this section, I will describe dependent, independent, and control variables used for the analyses of the impact of social capital on economic well-being. Many of these variables are compound variables constructed through a series of relevant questions. I will detail the components included in these compound variables, as well as the approaches used in their construction. All income related variables are adjusted to 1990 constant dollars so that they are more comparable. Table 2 presents a summary of all variables.

A. Dependent Variables

Personal income and income-to-needs ratio measured at wave 2 were used as dependent variables to represent economic well-being.

Wave 2 personal Income (ln). This measure of personal income at wave 2 included respondent income over the past 12 months from wages, self-employment, social security, other pensions, public assistance, government programs, child subsidies, interest and dividends, and other sources. Natural logarithms were applied to handle the distribution skewness of personal income. Before converting to natural logarithm values, $ 0 income

values were replaced with $1 income values to avoid missing values when applying natural logarithms.

Wave 2 income-to-needs ratio (ln). This measure of income took family size into account. The variable was constructed by dividing the family income over the past 12 months by poverty thresholds for the relevant family size. As with the wave 2 personal income variables, natural logarithms were applied to handle the distribution skewness of wave 2 income-to-needs ratios, and $1 income values were substituted for families reporting zero income.

B. Independent Variables

Independent variables include bridging capital and bonding capital. This study used voluntary group activities participation to represent bridging capital. Social activities, giving help to relatives and friends, receiving help from relatives and friends, and perceived supports in emergency situations were used to represent bonding capital. I will detail the construction of these variables and the rationale for using these variables to represent bridging and bonding capital later.

(a) Bridging capital

Wave 1 group activities participation was used to represent bridging capital at wave 1. At wave 1, respondents were asked the following questions: "Here is a list of various kinds of organizations. How often if at all, do you participate in each type of organization? " The listed organizations included: fraternal groups; service clubs; veterans' groups; political groups; labor unions; sports groups; youth groups; school related groups; hobby or garden clubs; school fraternities or sororities; nationality groups; farm organizations; literary, art, study or discussion groups; professional or academic

societies; and church-affiliated groups. The response options ranged from never, several times a year, about once a month, about once a week, and several times a week, represented by a scale ranging from 0 to 4 respectively. In the constructed variable of group activities participation, I constructed a scale by summing responses across these questions for each respondent, with larger numbers indicating more intense group activity participation. The standardized Cronbach alpha is .68 for this constructed variable.

The rationale of treating group activity participation as bridging capital is based mainly on previous empirical studies. In the surveys of NSFH, respondents were asked about their frequency of attending activities of various voluntary organizations. These organizations are nearly the same as those used in the GSS surveys, which have been used to represent social capital with bridging nature (Putnam, 1995b). In particular, several studies such as those conducted by Beugelsdijk & Smulders (2003) and Sabatini (2008) have used affiliations of voluntary organizations similar to those quested in this study as an indicator of bridging capital, although the bridging capital was measured at aggregate levels.

(b) Bonding capital

Social activities. Respondents were asked how often they spent a social evening with 4 types of persons: (a) relatives, (b) a neighbor, (c) people they work with, and (d) friends who lived outside their neighborhoods. The frequencies of these activities ranged from never to several times a week, with 0 indicating never and 4 indicating several times a week. For each respondent, a scale was constructed by summing responses across the questions for the four types of persons, with larger numbers indicating higher frequencies. The standardized Cronbach alpha is .47 for this constructed variable.

Giving help to kin and friends. Respondents were asked if they had given help to the following kin and friends not living in their households during the last month: friends, neighbors or co-workers; adult sons or daughters; parents; brothers/sisters; and other relatives. The content of help included (a) babysitting or child care; (b) transportation; (c) other kinds of work around the house; and (d) advice, encouragement, and moral or emotional support. The matrix of help receivers and help types forms 20 questions (i.e., five types of kin/friends × four types of help). For each question, dummy coding was applied with 0 indicating not giving help and 1 indicating helping. For each respondent, a scale then was constructed by summing responses across these questions, with larger numbers indicating higher levels of giving help to relatives and friends. The standardized Cronbach alpha is .69 for this constructed variable.

Receiving help from kin and friends. The questions for this variable were similar to those for the variable of giving help described above, but they instead asked if respondents received these types of help from kin and friends. In the constructed scales for each individual, larger numbers indicate higher levels of receiving help from kin and friends. The standardized Cronbach alpha is .58 for this constructed variable.

Perceived emergency supports. Respondents were asked the following three questions: (a) "Suppose that you had an emergency in the middle of the night and needed help. Who would you call?" (b) "What if you had to borrow $200.00 for a few weeks because of an emergency? Who would you ask?" and (c) "Suppose you had a problem, and you were feeling depressed or confused about what to do. Who would you ask for help or advice? " The response options to each of theses questions include: no one; friends, neighbors, or co-workers; son or daughters (19 and over); parents, brothers and

sisters; other relatives; and more than one source of help. For each question, respondents who answered "no one" were assigned a value of 0, respondents who had one type of kin or friend for help were assigned a value of 1, and respondents who had more than one source were assigned a value of 2. For each respondent, a scale then was constructed by summing responses across these questions, with larger numbers indicating more perceived supports. The standardized Cronbach alpha is .49 for this constructed variable.

Obviously, all of these four constructed bonding capital variables - social activities with relatives and friends, giving help to relatives and friends, receiving help from relatives and friends, and perceived emergency supports - reflect the intensity of networks of kin and friends. As I discussed in the previous literature review, networks of kin and friends are more likely to consist of people with similar social and economic backgrounds, and have been used as the major indicators of bonding capital in previous empirical studies (Briggs, 1998; Beugelsdijk & Smulders, 2003).

C. Control Variables

Based on existing literature concerning individual economic well-being, the OLS models controlled for a series of variables that may impact individual income and income-to-needs ratios over time. These control variables were drawn primarily from wave 1 variables, as well as several variables indicating important changes between wave 1 and wave 2.

Wave 1 personal income (ln). Similar to the personal income measurement at wave 2, this measure of personal income at wave 1 included respondents' annual income from wages, self-employment, social security, other pensions, public assistance, government programs, child subsidies, interest and dividends, and other sources. Wave 1 personal

income was adjusted to 1990 constant dollars so that they were comparable to wave 2 income. Natural logarithms were applied to handle the distribution skewness of wave 1 personal income. Zero income was replaced by $1 to avoid missing values while applying natural logarithms.

Wave 1 spouse/partner income. The construction of spouses/partners' income was the same as that of wave 1 personal income. Zero income was replaced by $1 to avoid missing values while applying natural logarithms.

Age. This included four dummy variables indicating respondent age groups: 19-24, 25-34, 35-44, and 45-59. The age group of 19-24 was used as the reference group in the regression models.

Education. There were 3 dummy variables to indicate respondents' educational levels: less than high school (less than 12 years education), high school (12 years of education), and some college and above (13 years and more education) . Less than high school education was used as the reference group in the regression models.

Gained degree between wave 1 and wave 2. This variable was taken from wave 2, but it reflected respondents' educational achievement between two waves. At wave 2, respondents were asked if they have gained a degree after their wave 1 interview. This variable was a dichotomous variable, with 1 indicating yes (got a degree) and 0 indicating no.

Race. There were three dummy variables to indicate respondents' race: non-Hispanic white, black, and others. Non-Hispanic white was used as the reference group in the regression models.

Gender. Male was represented by 1 and female by 0.

Marital status. There were three dummy variables indicating respondents' marital status at wave 1: married; divorced, widowed, and separated; and never married. Never married was used as the reference group in the regression models.

Marital status change between wave 1 and wave 2. There were three dummy variables indicating respondents' marital status changes between wave 1 and wave 2: no change, non-married to married, and married to non-married. "No change" means respondents did not change their marital status between wave 1 and wave 2. They maintained either married status or one type of single status (including never married, widowed, divorced, and separated) at both waves. "Non-married to married" means marital status changed from any of the single statuses at wave 1 to married status at wave 2. "Married to non-married" means marital status changed from married status at wave 1 to any of the single statuses at wave 2. "No change" was used as the reference in the regression models.

Because marital status change may affect personal or family economic well-being, it is important to include this variable in the models. However, if a respondent had more than one marital status change between the two waves, this variable could not reflect that status. For example, suppose a respondent was married in wave 1, and then both divorced and remarried between wave 1 and wave 2. Under this circumstance, the respondents' marital status change will be coded as "no change," because there is no information regarding their multiple marital changes between wave 1 and wave 2 in the dataset. This possibility may cause small inaccuracies in the variable categorization.

Number of children at home. There were four dummy variables to indicate whether the respondents' family had 0, 1, 2, and 3 and more children aged below 18 living at

home. Respondents with no child at home will be used as the reference group in the regression models.

Working currently. Respondents were asked if they currently worked for pay at the wave 1 interview. Those who answered yes were coded as 1, and those who answered no were coded as 0.

Perceived health status. This was a dummy coded variable, which measured respondents' self-perceived health status compared with people of the same age. In the original question, respondents were asked to rate their health status using a five-point likert scale: very poor, poor, fair, good, and excellent. Because the frequencies of "very poor" and "poor" were small, they were grouped together with "fair" rating. Good status and excellent status were coded as 1; and fair status, poor status, and very poor status were coded as 0.

Family ever received public assistance. The welfare experience in a family may affect people's future economic well-being. This variable was dummy coded. In wave 1 interview, respondents were asked if their families had ever received public assistance before respondents were about 16 years old. Those who answered yes were coded as 1, while those who answered no were coded as 0.

Address change between two waves. This variable was from wave 2, where respondents were asked how many times they had changed their address between wave 1 and wave 2. Respondents who had changed their addresses between the two waves were coded as 1, and those who did not change were coded as 0.

Metropolitan statistical areas. According to the United States Census Bureau, a Metropolitan Statistical Area is defined as an area of one or more adjacent counties or

county equivalents that includes at least one urban core area containing a population of 50,000 and more; the adjacent territory and the core area should be highly integrated in terms of their social and economic aspects, indicated by abundant commuting ties (United States Office of Management and Budget, 2006). This variable was dummy coded. Respondents living in metropolitan statistical areas were coded as 1, otherwise 0.

Region. The regions of the nation were coded into the South, Northeast, Northcentral, and West, according to the definitions of the Census Bureau. The South was used as the reference group for the regression models.

II. METHODS OF ANALYSIS

First, I conducted descriptive analyses to illustrate the characteristics of the selected sample. The means (including standard errors) or proportions of dependent, independent, and control variables used in the study were presented. The data were weighed to reflect the representation of the general population. Second, Ordinary Least Squares (OLS) regression models were used to test the impacts of social capital and other control variables on respondents' personal income (ln) and income-to-needs ratio (ln) at wave two.

III. RESULTS

A. Descriptive Analysis Results

Table 3 shows the weighted demographic, social, and economic characteristics of the sample (N=3,198) for the analysis of social capital's impacts on economic well-being. Respondents' mean logged personal income at wave 2 was 9.26 in a range of 0 – 13.39 (the mean personal income was $30,179 in a range of $1 - $650,000), and mean logged

income-to-needs ratio at wave 2 was 1.23 in a range of -9.87 – 4.30 (the mean income-to-needs ratio was 4.76 in a range of 0 - 73).

In terms of respondents' social capital at wave 1, the mean bridging capital (group activities participation) was 4.62 in a range of 0 - 43. This average value corresponded to a respondent attending five types of voluntary organization activities several times a year (5 groups × a code of 1 for frequency of participation), or alternatively having been involved more intensively with a smaller number organizations. Among the four types of bonding capital, the mean value of social activities was 6.00 in a range of 0 - 16. This average level of bonding capital equated to a respondent going out for a social evening with two types of relatives or friends about once a week (2 types of relatives/friends × a code of 3 for frequency of contact).

The other variables representing bonding capital were giving help to and receiving help from kin and friends, and perceived emergency supports. The mean values for giving help to kin and friends was 4.24 in a range of 0 – 23, which roughly corresponded to a respondent giving one type of help to four types of kin/friends in the last month or more intensive help to a smaller number of kin and friends. Receiving help from kin and friends ranged from 0 – 19 with a mean value of 2.97, with the interpretation similar to that above for receiving help. The mean perceived emergency support was 2.85 in a range of 0 – 6. An example of this level of perceived support would be a respondent believing she could ask a family member or friend for night emergency help, to borrow $200, and to obtain advice for a problem (i.e., 3 types of support × 1 source =3).

Among the control variables, the mean value of wave 1 respondents' logged personal income was 8.68 in a range of 0 – 13.33 (the mean personal income was

$23,961 in a range of $1 – $615,000). The mean value of wave 1 spouse or partner's logged personal income was 7.69 in a range of 0 – 13.98 (the mean spouse/partner personal income was $28,168 in a range of $1 – $1,180,800).

With respect to demographic and social characteristics, about 40% were aged 25-34 at wave 1, while 34% were 35-44, 17% were 45-59, and 10% were 19-24. Most of the respondents (88%) were white, while the proportions for black (7%) and other races (5%) were comparatively small. The sample contains of more females (58%) than males (42%). Most respondents (81%) were married, with the remaining nearly equally distributed between never married (9%) and divorced, widowed, and separated (10%). Most respondents (85%) maintained the same marital status at wave 1 and wave 2. However, 10% of them changed from non-married status at wave 1 to married status at wave 2, and 5% changed from married status to non-married status. About one third (32%) of the respondents had no children aged below 18 at home, 24% had one child, 29% had two children, and 16% had three and more children.

The majority of the respondents (55%) had at least some college education at wave 1, while 41 percent had a high school degree and only 4 percent had less than a high school education. In addition, 7 percent of the respondents reported acquiring a degree between wave 1 and wave 2. Most of the respondents (83%) were working for pay when interviewed at wave 1. Most of the respondents (87%) reported having excellent or good health compared with people of the same age, while the remaining 13% rated their relative health status as fair, poor, or very poor. A small proportion (7%) of the respondents said their families had ever received public assistance before they were 16 years old.

More than one fifth (21%) of the respondents reported having changed their address at least once between the two interviews, and about three quarters (74%) were living in Metropolitan Statistical Areas. The majority of the respondents were living in the South and the Northcentral regions (31% for each), followed by the West (19%) and the Northeast (18%).

B. Multivariate Analysis Results

Table 4 presents the results of two OLS regressions predicting wave 2 economic well-being. The model predicting wave 2 personal income (ln) is significant ($F=37.74$, $p<.0001$), suggesting the independent and control variables contributed to explaining variance in wave 2 personal income. The model has an adjusted R^2 of .26, which means 26% of the variance in respondents' wave 2 personal income (ln) can be explained by the model.

When controlling for other factors, wave 1 bridging capital was positively associated with wave 2 personal income (ln) ($b=.02$, $p<.05$). However, none of the bonding capital - namely social activities, giving help to kin and friends, receiving help from kin and friends, and perceived emergency support - was significantly associated with wave 2 personal income (ln).

Several control factors measured at wave 1 were significantly related to wave 2 personal income (ln). These factors included respondents' wave 1 personal income (ln), wave 1 spouse or partner's income (ln); education; gender; marital status; and marital change between two waves; number of children at home; and residing in a Metropolitan Statistics Areas. Each unit increase in respondents' wave 1 personal income (ln) resulted in a .24 unit increase in their wave 2 personal income (ln) ($p<.0001$). However, wave 1

spouse or partner income (ln) was negatively associated with respondents' wave 2 personal income (ln) (b=-.03, p<.05). Compared with those with less than a high school education, respondents with a high school education (b=1.05, p<.0001) and at least some college education (b=1.08, p<.0001) had higher levels of wave 2 personal income (ln). Similarly, respondents who acquired a degree between wave 1 and wave 2 (b=.55, p<.0001) also had a higher average wave 2 personal income (ln).

Being male was associated with a higher average wave 2 personal income (ln) (b=1.08, p<.0001). Married respondents tended to have a lower average wave 2 personal income (ln) than never married respondents (b=-.59, p<.01), but they were not significantly different from those who were divorced, widowed, and separated. Compared with those who maintained their marital status between the two waves, respondents who changed from married status to non-married status increased the average wave 2 personal income (ln) (b=1.23, p<.0001). Compared with those without a child under 18 at home, respondents with two children (b=.30, P<.05) were more likely to have a higher average wave 2 personal income (ln), and respondents with three and more children (b=.28, p=.051) also showed such positive impact at a nearly significant level.

Respondents who were currently working for pay at wave 1 had a much higher wave 2 personal income (ln) (b=1.01, p<.0001), compared with those not working for pay. In addition, those living in a Metropolitan Statistical Area had a moderately higher wave 2 personal income (b=.21, p<.05).

The model predicting wave 2 income-to-needs ratios (ln) also is statistically significant (F=33.10, p<.0001). This model has an adjusted R^2 of .24, indicating 24% of the variance in respondents' wave 2 income-to-needs ratios (ln) can be explained by the

independent and control variables. When controlling for other factors, wave 1 bridging capital was significantly associated with wave 2 income-to-needs ratios (ln) (b=.01, p<.001).

A series of control variables also had significant impact on wave 2 income-to-needs ratios (ln). Both wave 1 personal income (ln) (b=.03, p<.0001) and spouse or partner income (ln) (b=.04, p<.0001) were positively associated with wave 2 income-to-needs ratios (ln). Compared with respondents aged 19-24, respondents aged 35-44 (b=.35, p<.0001) and 45-59 (b=.38, p<.0001) had higher average wave 2 income-to-needs ratios (ln). Compared with those with less than high school education, those with a high school (b=.65, p<.0001) and at least some college (b=.88, p<.0001) had higher average wave 2 income-to-needs ratios (ln). Blacks (b=-.38, p<.0001) and other races (b=-.39, p<0001) also had lower average wave 2 income-to-needs ratios (ln), when compared with non-Hispanic whites.

When compared with those who were never married, married respondents had a higher average wave 2 income-to-needs ratio (ln) (b=.23, p<.01). Marital status change between wave 1 and wave 2 significantly affected wave 2 income-to-needs ratios (ln). When compared with those who did not change their marital status between the two waves, respondents who changed from non-married status to married status had a higher average wave 2 income-to-needs ratio (ln) (b=.46, p<.0001), while respondents who changed from married status to non-married status had a lower average wave 2 income-to-needs ratio (ln) (b=-.29, p<.001).

The number of children at wave 1 was negatively associated with wave 2 income-to-needs ratios (ln). Compared with those without a child under 18 at home, those with

one child (b=-.18, p<.001), two children (b=-.22, p<.0001), and three and more children (b=-.49, p<.0001) had a lower average wave 2 income-to-needs ratio (ln). Respondents currently working for pay at wave 1 (b=.24, p<.0001), and respondents who reported having good and excellent health status (b=.13, p<.05) compared with people of the same age, were positively associated with average wave 2 income-to-needs ratios (ln). Residing in a Metropolitan Statistical Area (b=.15, p<.001) and in the Northeast (b=.05, p<.01) resulted in an increase in average wave 2 income-to-needs ratios (ln).

IV. DISCUSSION

The analyses showed that bridging capital, as indicated by participation in various activities in voluntary organizations, was positively associated with individual future economic well-being. However, individual social, help, and support interactions with kin and friends, which constitute bonding capital, did not show such an effect on future economic well-being. These findings corroborate theoretical hypotheses that bridging capital but not bonding capital helps people advance economically (Briggs, 1998; Putnam, 2002), and are consistent with hypothesis 1 and 2. The findings are also generally consistent with previous studies that have examined the economic impacts of one or both of these two types of social capital (Beugelsdijk & Smulders, 2003; Briggs, 1998; Henly, Danziger, & Offer, 2005; Lombe & Ssewamala, 2007).

Some other variables also showed impacts on individual economic well-being over time. Higher respondents' personal income at wave 1 predicted higher personal income at wave 2, which means respondents' economic classes were generally stable over time. However, higher spouse or partner income at wave 1 was negatively associated with respondents' personal income at wave 2. This corresponds to existing research that

marriage may have a disincentive impact on family income earner's labor force participation, due to the design of tax policies such as the Earned Income Tax Credit (Eissa & Hoynes, 2004). The positive associations between education and individual income and income-to-needs ratio at wave 2 are consistent with most of existing literature.

Males earned more in personal income over time, although being male did not contribute to higher income-to-needs ratios. This may mean that higher male income earners can cause disincentives for labor force participation of their spouses, as suggested in previous research (e.g., Smock, Manning, & Gupta, 1999). An interesting phenomenon is that when respondents changed from non-married status at wave 1 to married status at wave 2, they tended to have higher income-to-needs ratios. In contrast, those who changed from married status to non-married status, even though they earned more at wave 2, had lower average income-to-needs ratio. These results generally are consistent with previous research that marriage is important in maintaining good family economic status. For example, Smock and colleagues found that marriage could promote women's economic well-being over time as measured by income-to-needs ratio and family income, and divorce would degrade such status.

V. IMPLICATIONS

These findings have meaningful implications for social policy and community program design. Over the past decade, social capital theories have evolved into one critical component in community building models, which feature "emphasiz[ing] development of relationships within and outside of the community and use of community assets to leverage assets from outside to solve common problems" (Saegert, 2006, p. 275).

The relationships within and outside of the community correspond to social capital inside and outside the community.

The unique effects of bridging capital on economic outcomes have gained special attention in some community building programs. For example, the World Bank has implemented various social capital related community projects around the world, including the development of a Social Capital Implementation Framework as a guideline for practice. In the conceptual frameworks underlying these projects, organizational affiliations and various networks connecting the community to the outside world have been viewed as bridging ties cutting across social divides, and have been deemed as the key to reaching outside information and resources for the transformation of disadvantaged communities (World Bank, 2008).

Work by the Annie E. Casey Foundation provides another example of featuring bridging capital development strategies in community programs. The foundation launched a decade-long "Making Connections" project in 10 U.S. cities in 1999 to improve child well-being in disadvantaged communities (http://www.aecf.org/MajorInitiatives/MakingConnections.aspx). One of the primary strategies of this initiative was to strengthen connections within and outside communities to create job opportunities, provide financial products for asset building, and enhance community social support for these disadvantaged families. The project has made substantial progress in terms of realizing these goals (Brisson & Usher, 2007).

Knowledge about bonding and bridging capital can also contribute to the design of community-based service programs. Many community programs focus exclusively on the poor, which results in participants' limited access within programs to people with diverse

social and economic backgrounds. The availability of bridging capital opportunities in such programs often is very limited, so adding program elements that actively establish bridging ties may be useful. In community educational or training programs, instructors or guest speakers may be important sources for establishing linkages for bridging capital. In this sense, the selection of instructors or guest speakers should not only be based on who can accurately provide relevant knowledge, but also who may offer potential bridging capital for the participants. For example, in some community-based asset building programs aimed at educating low-income people with financial product knowledge as a strategy to promote their economic status (Anderson, Zhan, & Scott, 2004; Lombe & Ssewamala, 2007), it would be very meaningful to invite economically successful community residents as guest speakers. The interactions of these guest speakers with program participants may form a kind of bridging capital, which can offer concrete examples to enhance program participant incentives for sustainable asset building behaviors. Similarly, in training programs for jobless persons, volunteer lectures from various employers or job hunter organizations merit consideration, because these are people who have high potential to provide bridging capital for the participants (Lockhart, 2005).

Emphasis on the importance of bridging capital on economic well-being does not meant to diminish the importance of bonding capital. Bonding capital has been shown to be critical for access to emotional and other instrumental support, which helps individuals to get by in difficult times such as food shortages, losing a home, or depression (Briggs, 1998; Henly et al., 2005). Understanding the difference between these two types of social capital and the benefits that each can provide can be useful to community program

development and service agents as they consider how to most meaningfully incorporate social capital ideas into practice.

CHAPTER 5
ANALYSIS OF THE IMPACT OF ECONOMIC WELL-BEING ON SOCIAL CAPITAL

Similar to chapter 4, this chapter includes the following sections: description of variables used for the analysis of the impact of economic well-being on social capital; methods used for the analysis; results presentation; discussions of the results and implications for policy and practice.

I. VARIABLES

A. Dependent Variables

All dependent variables in the models to predict economic well-being's impact on social capital were measured at wave 2. There were 4 dependent variables: group activities participation, social activities, giving help, and receiving help. These variables generally were constructed using the same methods as those comparable measures at wave 1 in chapter 4. However, the wave 2 social capital measures differed in a few respects due to differences between wave 1 and wave 2 survey as noted in the following variable description. In addition, the questions used to construct perceived emergency support at wave 1 were eliminated in wave 2 surveys, so the bonding capital types in wave 2 do not include perceived emergency support.

Wave 2 group activities participation. At wave 2, respondents were asked how frequently they attended voluntary group activities. These questions were similar to those at wave 1, but the organizations were organized into four groups: (a) service clubs, fraternal groups, or political groups; (b) work-related groups, such as unions, farm organizations, or professional societies; (c) sports, hobby or garden organizations, or discussion groups; and (d) church-affiliated groups (not including religious services). The

response options measuring frequencies of activities attendance were never, once a year or less, about once a month, about once a week, and several times a week (at wave 1, the corresponding response options were never, several times a year, about once a month, about once a week, and several times a week), represented by a scale ranging from 0 to 4 respectively. In the constructed variable of group activities participation, I constructed a scale by summing responses across these questions for each respondent, with larger numbers indicating more intense group activity participation. The standardized Cronbach alpha is .53 for this constructed variable.

Wave 2 social activities. The questions and the construction methods for this variable were all the same as those of wave 1 social activities, but the frequency measures changed in the manner discussed above for wave 2 group activities participation. The standardized Cronbach alpha is .43 for this constructed variable.

Wave 2 giving help to kin and friends. At wave 2, the questions regarding giving help to relatives and friends were the same as those used to construct wave 1 giving help to kin and friends variable, but at wave 2 there were only four types of help, because questions regarding help of repair to home and car were omitted. The standardized Cronbach alpha is .62 for this constructed variable.

Wave 2 receiving help from kin and friends. The questions and construction of wave 2 receiving help from kin and friends were the same as that of wave 2 giving help to kin and friends, except that the direction of help was reversed. The standardized Cronbach alpha is .56 for this constructed variable.

B. Independent Variables

Wave 1 respondents' personal income (ln) was used as an independent variable to predict respondents' social capital at wave 2.

C. Control Variables

All control variables were measured at wave one, except that the variable marital status change between wave 1 and wave 2 used information from both waves, and the variable "gained a degree" between the two waves was measured at wave 2.

Variables that may have an impact on social capital development over time were controlled. The first group of control variables included five social capital variables measured at wave 1, including group activities participation, social activities, giving help, receiving help, and perceived emergency support. It is reasonable to anticipate that wave 1 social capital should have impacts on wave 2 identical social capital or other relevant social capital, because social capital is said to possess some features of other capital forms, such as stocking (Bordiue, 1986).

A variety of personal and family characteristics were also included as control variables. These included age, race, gender, education, gained a degree between wave 1 and wave 2, marital status, marital status change between wave 1 and wave 2, number of children at home, perceived health status, address change, metropolitans statistical areas, and region. These control variables have been presented in previous studies applying multivariate analyses for similar research focuses (Alesina & La Ferrara, 2000; Putnam, 1995b; Rupasingha et al., 2006).

II. METHODS OF ANALYSIS

The sample used to examine the impact of economic well-being on social capital was the same as the one used to examine social capital's impact on economic well-being.

Because most of the variables used in these models have been introduced previously when predicting the effects of social capital on economic well-being, the descriptive analyses here targeted only wave 2 social capital variables. Next, I conducted OLS regression analyses to examine economic well-being's impact on four types of wave 2 social capital separately: bridging capital represented by group activities participation, bonding capital represented by social activities, giving help to kin and friends, and receiving help from kin and friends.

All of the regression models predicting social capital are identical, except that they have different dependent variables (social capital variables).

III. RESULTS

A. Descriptive Analysis Results

Variables used in the analysis of the impact of economic well-being on social capital are listed on Table 5. This table does not list control variables that are the same as those used in the analysis of the impact of social capital on economic well-being (Table 3).

At wave 2, the mean value of group activities participation (bridging capital) was 3.1 (Table 6). Among the three measures of bonding capital, the mean value of social activities was 7.4; the mean value of giving help to kin and friends was 3.7, and the mean value of receiving help from kin and friends was 2.7.

It would be useful to present a comparison of social capital variables between wave 1 and wave 2. However, the questions for bridging capital were significantly different at the two waves, and the frequency measures for social activities, giving help to kin and friends, and receiving help from kin and friends also differed slightly. Because of the

measurement differences, the comparison of social capital levels between the two waves would be questionable. Therefore, although I presented a table to list the mean values of social capital forms in Table 6, it only provides a rough sense concerning the status of social capital at the two waves. No specific tests were conducted to compare the difference in social capital at these two time points because of these measurement concerns.

B. Multivariate Analysis Results

(a) The impact of economic well-being on group activities participation (bridging capital)

The model predicting wave 2 group activities participation has an adjusted R^2 of .23 (panel 1 of Table 7), which explains 23% of the variance in respondents' wave 2 bridging capital. When controlling for other factors, wave 1 personal income (ln) was positively associated with wave 2 bridging capital (b=.05, p<.01).

When controlling for other factors, wave 1 bridging capital had a positive impact on wave 2 bridging capital (b=.22, p<.0001), and social activities had a positive impact as well (b=.06, p<.001). Respondents' education, race, gender, and perceived health status also showed significant impact on wave 2 bridging capital. For example, when compared with those with less than high school education, respondents with high school education (b=.49, p<.05) and some college and above education (b=1.2, p<.0001) at wave 1 tended to have higher average wave 2 bridging capital. Compared with whites, blacks had higher average wave 2 bridging capital, as did males (b=.39, p<.0001). Those who reported having good or excellent health status versus those who reported fair or worse health status had higher average wave 2 bridging capital (b=.23, p<.05).

(b) The impact of economic well-being on social activities

The model predicting wave 2 social activities has an adjusted R^2 of .10 (panel 2 of Table 7), which explains 10% of the variance in wave 2 social activities.

Wave 1 social activities had an impact on wave 2 social activities (b=.24, p<.0001), so did wave 1 bridging capital (b=.05, p<.01). However, other wave 1 social capital variables were not significantly associated with wave 2 social activities.

Several demographic and family composition variables were significantly related to wave 2 social activities. Compared with respondents aged 19-24 at wave 1, respondents aged 35-44 at wave 1 tended to have lower average wave 2 social activities (b=-.55, p<01). Compared with whites, blacks had somewhat lower social activities (b=-.07, p<.0001). In addition, people living in the Northeast tended to have higher average wave 2 social activities (b=.33, p<.05).

Marital status also was related to social activities at wave 2, with married respondents having lower average wave 2 social activities than those who were never married (b=-.57, p<.05). The impact of marital status on social activities can also be reflected by examining the impact of marital status change between the two waves. Compared with those who did not change their marital status between the two waves, respondents who changed from non-married status to married status resulted in a reduction in average wave 2 social activities (b=-.69, p<.0001). However, respondents who changed from married status to non-married status showed increased average wave 2 social activities (b=.49, p<.05).

The number of children in a family was another important factor impacting wave 2 social activities. Compared with those without a child at home, respondents with two

children (b=-.62, p<.001) and with three and more children (b=-.62, p<.001) had lower average wave 2 social activities.

Employment and education variables also showed some relationships with social activities. Respondents who were working for pay at wave 1 also showed lower average wave 2 social activities (b=-.86, p<.0001). Compared with those with less than high school education, respondents with high school education (b=-.55, p<.05) and respondents with at least some college (b=-.53, p=.051) had lower average wave 2 social activities.

(c) The impact of economic well-being on receiving help from kin and friends

The model predicting wave 2 receiving help from kin and friends has an adjusted R^2 of .22 (panel 1 of Table 8), which explains 22% of the variance of this variable. When controlling for other factors, wave 1 personal income (ln) was just below statistical significance with respect to being related to wave 2 receiving help from kin and friends (b=.05, p=.056). Spouse/partner income was positively associated with receiving help from kin and friends (b=.03, p<.02).

Various other wave 1 social capital measures were positively impact related to wave 2 receiving help from kin and friends. Wave 1 receiving help from (b=.24, p<.0001) and giving help to kin and friends (b=.10, p<.0001) both were positively associated with wave 2 receiving help from kin and friends. Social activities at wave 1 (b=04, p<.01) likewise were positively related to wave 2 receiving help from kin and friends.

A series of control factors also showed significant impacts on wave 2 receiving help from kin and friends. Compared with those aged 19-24, respondents aged 35-44 (b=-.61, p<.0001) and 45-59 at wave 1 (b=-.89, p<.0001) had lower levels of receiving help from

kin and friends. Males also had a lower levels of wave 2 receiving help from kin and friends (b=-.29, p<.001). In addition, compared with those who did not have a child at home, respondents with one child (b=.23, p<.05) and three and more children (b=.41, p<.01) had higher levels of receiving help from kin and friends.

Although wave 1 marital status did not show significant impact on wave 2 receiving help from kin and friends, marital status change at wave 1 and wave 2 showed such impact. Compared with those who did not change their marital status at wave 1 and wave 2, respondents who changed from non-married status to married status had a lower level of receiving help from kin and friends at wave 2 (b=-.42, p<.01). In contrast, respondents who changed their marital status from married status to non-married status had a higher level of wave 2 receiving help from kind and friends (b=.86, p<.0001). Compared with respondents with less than high school education, respondents with some college and above had a moderately higher level of wave 2 help received from kin and friends (b=.50, p<.01). In addition, if respondents gained a degree between wave 1 and wave 2, they also had a higher level of receiving help from kin and friends (b=.31, p<.05).

(d) The impact of economic well-being on giving help to kin and friends

The model predicting wave 2 giving help to kin and friends has an adjusted R^2 of .19 (panel 2 of Table 8), which explains 19% of the variance in respondents' wave 2 giving help to kin and friends. When controlling for other factors, respondents' wave 1 personal income (ln) did not show significant impact on wave 2 giving help to kin and friends.

Several other social capital related variables in the model were significantly related to wave 2 giving help to kin and friends. Wave 1 giving help to kin and friends (b=.26,

p<.0001) and receiving help from kin and friends (b=.10, p<.0001) had an impact on increased average wave 2 giving help to kin and friends, while bridging capital (b=.04, p<.0001) and social activities (b=.06, p<.0001) also were positively related to wave 2 social activities.

Several family and residential characteristics also were related to giving help at wave 2. Compared with those who did not change marital status at wave 1 and wave 2, respondents who changed from married status to non-married status had higher levels of giving help to kin and friends (b=.43, p<.05). In addition, the number of children aged below 18 at home was positively associated with wave 2 giving help to kin and friends. Compared with those without a child at home, respondents with one child (b=.28, p<.05), two children (b=.28, p<.05), and three and more children (b=.56, p<.0001) had higher levels of giving help to kin and friends at wave 2. Finally, respondents living in metropolitan areas (b=.20, p<.05) and the Northeast (b=.25, p<.05) had higher levels of giving help to kin and friends.

Respondents' education at wave 1 was positively related to wave 2 giving help to kin and friends. Compared with those who had less than a high school education, respondents with high school (b=.53, p<.001) and at least some college (b=.66, p<.001) education showed higher levels of wave 2 giving help to kin and friends. In addition, respondents who gained a degree between wave 1 and wave 2 also exhibited a higher level of wave 2 giving help to kin and friends (b=.46, p<.01).

IV. DISCUSSIONS

A. The Impact of Respondents' Income on Bridging Capital

In terms of bridging capital, wave 1 respondents' income (ln) was positively associated with wave 2 bridging capital. This finding confirms the assumption of hypothesis 3.

This finding is consistent with some previous studies examining the impact of economic well-being on individual level social capital, which suggest the difficulties of establishing bridging ties among people with heterogeneous social and economic backgrounds (Briggs, 1998; Das, 2004; Middleton et al., 2005). In particular, this finding is consistent with studies by Glaeser et al.'s (2002) and Alesina and La Ferrara's (2000), which found that respondents' income was positively associated with voluntary group memberships.

However, the finding from this study differs from some other studies that have found that income has no impact on social capital (Barnes, 2003; Putnam, 1995b). This may be because social capital measures in those studies are different from the measures used in this study, such as is the case with Barnes (2003), or because other important factors were not controlled in the analyses, such as in the study by Putnam (1995b).

B. The Impact of Respondents' Income on Bonding Capital

In all of the models predicting the impact of economic well-being on social capital, respondents' income did not affect any of the three forms of bonding capital measured at wave 2 -- social activities, receiving help from kin and friends, and giving help to kin and friends. Therefore, the findings provide support for hypothesis 4.

These findings generally corroborate theories and findings from previous empirical studies which suggest that bonding capital development is independent of individual economic well-being (Briggs, 1998; Das, 2004; Light, 2004; Middleton et al., 2005). For

example, Das (2004) found that although it was hard to establish interaction among people of different economic status in a community, there were frequent daily mutual supports among low-income families such as small money borrowing and household work help, which corresponded to the bonding capital in this study.

C. The Impact of Control Variables on Bonding and Bridging Capital

Wave 1 social capital had some significant impacts on wave 2 social capital. First, there were positive relationships between each wave 1 social capital form and its identical form of social capital at wave 2. For example, each unit increase in wave 1 bridging capital corresponded to a .22 unit increase of wave 2 bridging capital. The situation was similar for other several forms of bonding capital. Each unit increase of wave 1 social activities, giving help to kin and friends, and receiving help from kin and friends resulted in .24-.26 unit increases in their corresponding wave 2 measurements. This suggests some continuity in social capital development and growth over time. That is, those individuals who have higher levels of certain types of social capital are more likely to maintain a higher level of such social capital over time.

In addition, different forms of social capital can affect each other. For example, wave 1 bridging capital was positively associated with wave 2 social activities, although not on other bonding capital forms. Wave 1 social activities and giving help to kin and friends were mostly likely to have further "spillover" effects on other forms of social capital. That is, higher levels of these two types of social capital at wave 1 predicted higher levels of all other forms of social capital at wave 2. Such "spillover" effects similarly have been reported in earlier studies. For example, Barnes (2003) found that ties

of kin, friends, and neighbors were positively associated with individuals' involvement in voluntary organizations and community groups.

The two types of help interaction social capital (giving help to kin and friends and receiving help from kin and friends) had a positive impact on each other. This suggests a reciprocal interaction between these two types of bonding capital, and suggests the assumption held by many social capital theorists that reciprocal relationships are the underlying norm built into social capital. Some empirical studies also have confirmed the prevalence of such reciprocal interactions in social capital. For example, Das (2004) found that low-income working families provided reciprocal supports to each other in their daily lives. The findings also indicated that selected demographic variables had impact on future individual level social capital. For example, older age groups tended to have lower wave 2 social activities and receiving help from kin and friends, but age did not affect other social capital forms. Previous studies also have found some age effects on social capital formation, but the results have been inconsistent. For example, Boisjoly et al. (1995) study found that age among adult groups was negatively associated with access to perceived support of time and money from kin and friends under emergency situations. Alesina and La Ferrara (2000) study found that people aged 30-39 had a lower level of social capital, as indicated by the likelihood of having at least one voluntary group membership, when compared to younger and older adults. Some other scholars have argued that older people have higher levels of social capital, or that there is a U-shape relationship between age and social capital stock. Unfortunately, there have been considerable differences in the social capital measures used in these studies, which may complicate the effects of age on social capital formation.

Education had a positive impact on all forms of social capital measured in this study except social activities, which is generally consistent with most previous studies suggesting the important effects of education on individual level and aggregate level social capital development, despite the variance in social capital measures used (Alesina & La Ferrara, 2000; Barnes, 2003; Boisjoly et al., 1995; Putnam, 1995b; Rupasingha et al., 2006).

This educational pattern was different with respect to social activities in the current study. When compared with those with less than a high school education, respondents with at least some college had comparatively lower wave 2 social activities. This may result from the fact that people with higher educational levels were more likely to be job centered and consequently had less time for social activities such as going out in the evening. This possibility is buttressed by the finding that respondents working at wave 1 had a much lower level of wave 2 social activities.

In terms of race, when holding other factors constant and compared with whites, blacks had higher average bridging capital but lower average wave 2 social activities. Previous studies have found that blacks exhibited a higher level of involvement in voluntary organizations (Alesina & La Ferrara, 2000; Barnes, 2003; Putnam, 1995b), especially in religious and ethnic groups (Putnam, 1995b), as a way to establish and strengthen their minority identities in a community (Alesina & La Ferrara, 2000). The impacts of race on social capital may be twofold. Members of minority groups may show higher levels of social capital than majority members, maybe partially because of the solidarity reasons mentioned above. However, at the community or national levels, racial diversity may actually reduce the level of social capital, because people are less likely to

connect with others who are different from them (Alesina & La Ferrara, 2000; Putnam, 1995b; Rupasingha et al., 2006).

Putnam also has pointed out the coincidence between the greatest achievement of civil rights during the 1960s and the starting point of declining social capital in the U.S. That ear witnessed increasing racial diversity in communities. Research by Alesina & La Ferrara (2000) and Rupasingha et al. (2006) has examined racial or ethnicity diversity in a community, where racial diversity was measured by the probability of two persons randomly drawn from a community belonging to the same race. Both studies found that racial diversity in a community was negatively associated with social capital measures. The current study did not include community level factors, and therefore did not include racial diversity in the analyses. However, the proceeding discussion suggests that the impacts of race on social capital development may be twofold, so further study utilizing both individual level and aggregate measures of race is needed to gain a more thorough understanding of these impacts..

The findings suggest that marital status generally did not affect changes in bonding and bridging capital over time, except that married people at wave 1 had a lower level of social activities at wave 2 when compared with those who were never married. Marital status has received little attention in studies examining factors affecting social capital development (e.g., Alesina & La Ferrara, 2000; Barnes, 2003; Boisjoly et al., 1995; Rupasingha et al., 2006). Among a few studies including marital status in the models predicting social capital, Alexander's (2007) study has not found an association between marital status and social capital at the state level. The finding from the current study that

married people at wave 1 tended to have lower social activities at wave 2 seems plausible, because married people may become increasingly family focused over time.

The findings regarding the impact of marital status change and number of children in a family provide evidence on the importance of bonding capital for people to "get by" their daily lives. For example, when compared with those who did not change marital status between the two waves, those who changed from married status to non-married status tended to have higher average wave 2 receiving help from and giving help to kin and friends. On the other hand, those who changed from non-married status to married status showed lower help interactions with kin and friends. These findings suggest that networks of kin and friend are important supporting resources for people's daily lives, especially when a nuclear family breaks. The importance of such help interactions is also reflected in families with children. The findings suggest that people with more children at wave 1 were more likely to engage in these two types of help interactions.

Findings regarding receiving help and giving help social capital further confirm the existence of reciprocal norms in social capital. For example, those who changed from married status to non-married status not only gained more help supports from their kin and friends, they also provided more help to their kin and friends simultaneously. This phenomenon is further reflected in the help interactions among people with more children; they received more help from kin and friends, but also provided more help to their kin and friends.

However, social networks among relatives and friends of disadvantageous individuals are not necessarily positive. For example, Portes and Sensenbrenner's (1993) research in immigrant communities indicated that although strong social ties in the

community could help new immigrants to survive and thrive, these ties consequently implied their future obligations to the community, which could restrain successful businesses from growing out of the community later. In addition, strong social ties can cause imbalance between scarce resources and heavy obligations among disadvantageous individuals, which may harm their psychological well-being. For example, Kawachi and Berkman's (2001) review study concluded that although social ties generally played a beneficial role for individual psychological well-being, it could harm the mental health of women with limited resources when they were overly burdened with obligation to take care of family members.

The effects of employment status on social capital also merit discussion. The findings suggest that employment generally does not affect respondents' bridging and bonding capital over time. Furthermore, being employed at wave 1 had a relatively large negative impact on wave 2 social activities. Boisjoly et al.'s (1995) study also found that employment status had no impact on social capital, where the social capital was measured by perceived support of money and time from kin and friends under emergency situations. In contrast, some other previous studies suggest a positive relationship between employment and social capital development (Alesina & La Ferrara, 2000; Putnam, 1995b; Rupasingha et al., 2006).

After further examination, the results from the current study may not diverge substantially from previous studies suggesting a positive relationship between employment and social capital. These previous studies agreed on two-fold effects of employment on social capital. That is, employment reduces the available time for social connections, but also increases channels for such connections by exposing people to a

larger social environment (Alesina & La Ferrara, 2000; Putnam, 1995b; Rupasingha et al., 2006). The study by Alesina & La Ferrara (2000) provided further evidence in this respect, by controlling whether respondents were non-employed, employed part-time, or employed full time. Compared with persons who were not employed, persons employed both part-time and full-time showed a positive effect on social capital as measured by the likelihood of having at least one voluntary group membership. However, such effect was larger for part-time employment than full-time employment. This suggests a tradeoff between exposing one to more connections through employment and the reduced time available for the social connections due to employment.

V. IMPLICATIONS

The findings from this study regarding the impact of economic well-being on social capital have meaningful implications for policy making and social service practice. In particular, personal income was found to be positively associated with future bridging capital development, therefore indicating that people with less income may be disadvantaged in this respect. This may suggest that low-income people face financial barriers in developing their bridging capital over time. More specifically, it is possible that low-income people often may lack the financial resources to participate to participate in relevant activates, such as the need of equipment and other costs for participating in various groups important for the development of bridging capital (Middleton et al., 2005).

The consequence of individual economic disadvantages on bridging capital development also can be implied from previous research regarding the relationship between homeownership and social capital. For example, DiPasquale and Glaeser (1999) used nationally representative datasets from the U.S. and Germany, and found that

homeownership was positively associated with individual social capital indicators such as participating in voluntary organizations. Although Rupasingha, Goetz, and Freshwater's (2006) study could not confirm such a positive relationship between homeownership and voluntary group involvement at the level of U.S. counties, their study found that the interaction of homeownership and income was positively associated with voluntary group involvement at the county level.

Another reason that economic disadvantage may constitute a barrier for involvement in various organizations concerns the fact that low-income people typically lack time and are often overwhelmed by family duties. For example, McBride, Sherraden, and Pritzker's (2006) qualitative study with 86 low-income and low-asset people revealed that, a subset of study participants had engaged in church and community-based volunteering and other civic activities. However, the desire for higher levels of such engagement was often hampered by issues related to their disadvantaged economic status, such as the lack of time due to holding multiple jobs to make ends meet, or overwhelming family duties.

Finally, people may not realize that social capital development, especially bridging capital development, can have important value for their future economic well-being. In this case, they often may lack incentives to participate in voluntary organizations and other activities necessary for bridging capital creation, especially given the previously mentioned competing demands of difficult lives.

Because the nature of bridging capital is indicated by social networks of people with heterogeneous social and economic backgrounds (Putnam, 2002), attempts to develop bridging capital for low-income people thus require fostering social connections

with people who have higher social and economic status. Such attempts can be relatively challenging, because previous research has suggested that people tend to develop connections with others of similar social and economic backgrounds (e.g., Das, 2004). Without facilitation through effective social capital development programs, low-income people consequently may be deterred from the challenge of breaking through such underlying barriers.

Therefore, community programs including bridging capital development as a strategy for poverty reduction need to carefully consider how the financial status of participants can affect prospects for engaging in such development. First, these programs should assess and alleviate possible financial barriers to participation faced by low-income people, in order to smooth their initial connections with people having higher social and economic status. This may include offering assistance such as basic facilities, equipment, or transportation, in order to minimize cost-related concerns of program participation (McBride, Sherraden, and Pritzker, 2006). Second, appropriate marketing and outreach strategies for effectively involving low-income people may be especially important in these programs. In addition to financial barriers, low-income people are often restricted from program participation by their limited time or by pressing family responsibilities. Developing responsive program locations, time schedules, and participant recruitment strategies thus may be important in overcoming such issues. Third, it is critical to foster low-income people's incentives to develop their own bridging capital, given that they may not understand its importance in many instances. Therefore, social capital programs should consider presenting educational workshops or distributing flyers or other information concerning the potential effects of social capital, as one initial

step to raise awareness of social capital effects and possibilities among low-income populations.

Another strategy is to incorporate social capital development into other programs serving low-income audiences. For example, community financial education programs targeting low-income people can integrate elements valuable in building bridging capital such as inviting leaders of local voluntary organizations as guest speakers to introduce their programs and to invite people to participate in their organizational activities. Similarly, inviting bankers or others higher economic status community members to speak about community institutions may offer low-income people the opportunity to engage with such important community actors in relatively friendly settings, and hence lessen possible reluctance to community involvement.

Bonding capital, especially the help interactions among kin and friends, is valuable for helping people to get by daily lives. As indicated in this study, respondents who changed from married status to non-married status greatly increased their help interactions with kin and friends, indicating a higher need for emotional and other daily life supports after their marital status change. As indicated in this study, this type of bonding capital generally is not associated with individual economic status, and thus economic barrier should not be a serious concern. However, we also should be aware that low-income people may rely more on such bonding capital than higher income people because of its importance in helping them to overcome material hardship and other daily life difficulties (Henly, Danziger, and Offer, 2005). It is thus helpful if community programs can help low-income people to strengthen and extend their family and friend

connections, so that they can have a better chance of establishing effective mutual support networks which can help to cope their daily life challenges.

CHAPTER 6
CONCLUSIONS AND LIMITATIONS

This chapter concludes this study and discusses its limitations.

I. CONCLUSIONS

This study examined the long-term impact of bridging capital and bonding capital on economic well-being at the individual level, and correspondingly the impact of economic well-being on bridging capital and bonding capital accumulation. The findings generally support the hypotheses that bridging capital affects individual long-term economic well-being, while bonding capital does not show such an effect. The findings also support the hypotheses that economic well-being has a significant impact on individual bridging capital accumulation over time, but generally does not affect individual bonding capital. These study findings provide evidence regarding the difference between bridging capital and bonding capital in terms of their relationship with economic well-being at the individual level, and have useful implications for policy and practices.

II. LIMITATIONS

Several limitations in this study should be noted. First, bridging capital was solely represented by voluntary group affiliations due to limitations of the NSFH data. Some other types of bridging capital that may have substantial impact on individual economic well-being, such as online connections (Boyd & Ellison, 2007; Ellison, Steinfield, & Lampe, 2007), could not be measured with the dataset used in this study. Second, although the indicators of both bonding and bridging capital derived from NSFH in this study were based on measurement approaches used in previous studies (e.g., Beugelsdijk & Smulders, 2003; Briggs, 1998), they only captured some features of social capital. For

example, the bridging capital measure was based on the frequency of respondent participating in various voluntary organizations, which did not account for variances of bridging capacity of different types of voluntary organizations. Similarly, in bonding capital measures such as giving help to or receiving help from kin and friends, respondents only answered "yes" or "no" to a specific type of help, which could not account for frequency variances of different types of help.

Third, the construction of bridging and bonding capital variables in this study rests on solid theoretical support. However, some of these did not have high internal validity, as indicated by high Cronbach alpha values (e.g., .60). Although it is not uncommon to construct compound variables with low internal consistency based on theoretical assumptions, future research with variables consisting of more consistent items would be desirable.

Fourth, the data used in this study are from two waves of interviews conducted five years apart. This longitudinal design has the advantage of showing the impact of social capital on economic well-being over time, as well as the impact of economic well-being on social capital overtime. However, such a wide time span also increases the likelihood that unobserved changes during the period between the two surveys may confound outcomes at wave 2 in the models.

Fifth, despite the longitudinal research design, the results from the regression models only measure associations between variables. While the time ordering of variables often is suggestive of related causal relationships, the analysis in this study is not determinative in this respect. Further research that can further establish causal

relationships between economic circumstances and social capital therefore would be valuable.

Finally, the sample used in this study included higher proportions of non-Hispanic whites with better social and economic status, as compared with those who dropped out the of the NSFH. This may result in biased estimation related to such differential attrition. Consequently, the implications presented here for social capital program development targeting low-income people can be only treated as suggestive.

Despite these limitations, this study has much strength, and makes a useful contribution to the growing literature on the importance of social capital for low-income populations. It is among the few studies to use a nationally representative dataset to examine the differential effects of bonding and bridging capital on economic well-being at the individual level. Further, by also examining the effects of economic well-being on the accumulation of bonding and bridging capital at the individual level, the study is unusual in looking at both the building of and the effects of social capital with respect to income. The findings support the existence of important differences between bridging and bonding capital, and have meaningful implications for policy and program design related to social capital development.

Future studies can usefully extend the work presented here in several ways. First, it would be meaningful to use improved measures of bonding and bridging capital in reexamining the hypotheses proposed in this study, particularly with a more specific focus on low-income people. Second, it would be interesting to analyze some potential pathways through which bonding and bridging capital may affect individual economic well-being. For example, the effects of bridging capital on economic well-being may

result because bridging capital provides valuable information, enhances trust, or fosters psychological momentum to advance. Third, in addition to studying relationships between various types of social capital and economic well-being, there has been increasing interest in recent years in understanding the effects of people's perceptions of neighborhood social capital on family processes and child well-being. It therefore would be interesting to examine whether people's perceptions of neighborhood bonding and bridging capital differentially affect important aspects of family and child functioning.

APENDIX
TABLES AND FIGURES

Figure 1: Social Capital's Impact on Economic Well-Being (Putnam) – 1

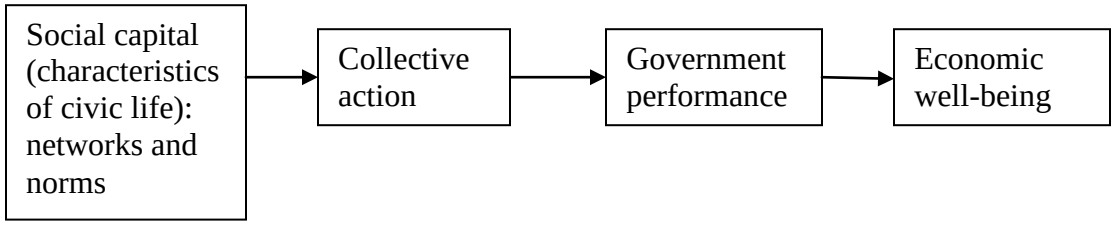

Figure 2: Social Capital's Impact on Economic Well-Being (Putnam) - 2

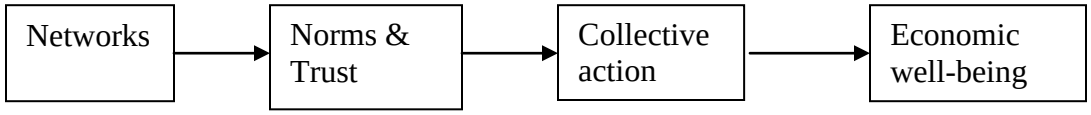

Figure 3: Framework of the Impact of Social Capital on Economic Well-Being

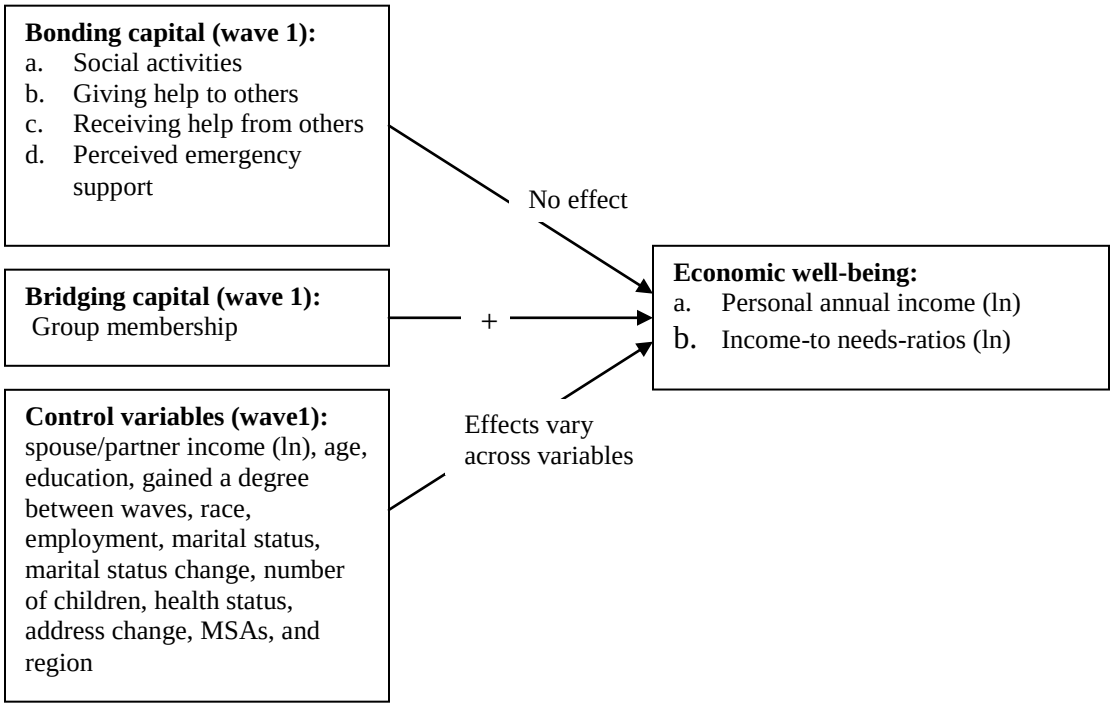

Figure 4: Framework of the Impact of Economic Well-Being on Social Capital

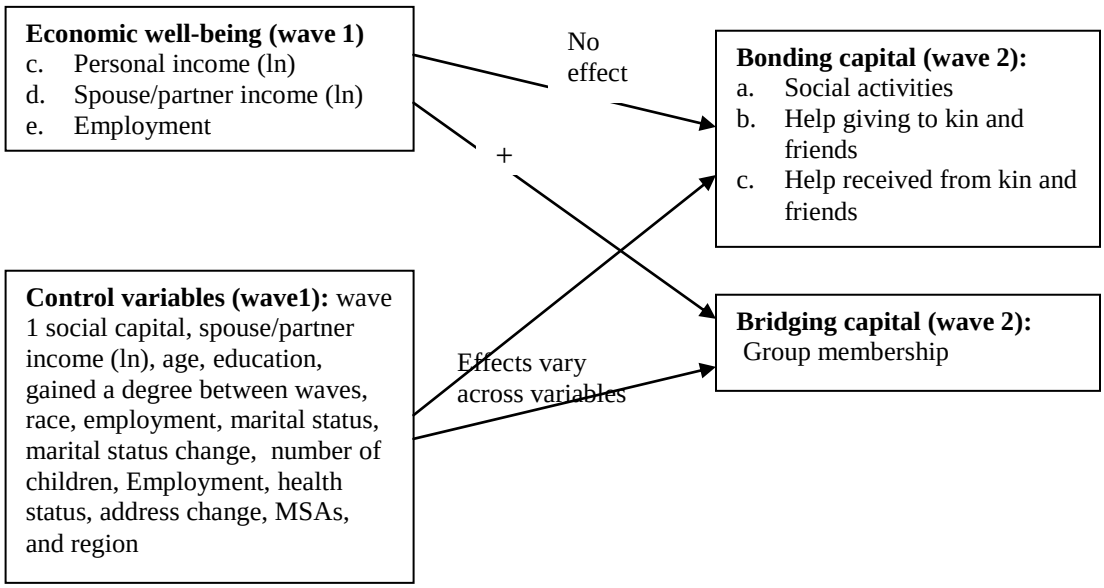

Table 1: Social Capital Measurement Differences in Empirical Studies

Proxy of Social Capital	Brehm 1997[1]	Rosenfeld 2001	Kawachi1 1997	Paxton 1999	Xu 2000	Kim 1998	Boisjoly 1998	Knack 1997 [2]	Current study
	GSS [3]	GSS	GSS	GSS	NSFH[3]	NSFH	SIPP[3]	WVS[3]	NSFH
Social activities				×		×			×
Help to and/or from kin and friends					× [4]				×
Perceived supports in emergency						×	×		×
Group membership	×	×	×	×		×			×
Trust in individuals	×	×	×	×				×	
Trust in institutions	×			×					
Civic engagement [5]		×							
Civic norms								×	

Notes:

(1) For studies with more than one author, only the first author is shown.

(2) In this study, only trust and civic norms are regarded as social capital. Group membership and confidence in institutions are regarded as possible sources of trust.

(3) GSS is the General Social Survey; NSFH is the National Survey of Families and Households; SIPP is the Survey of Income and Program Participation, and WVS is the World Values Surveys.

(4) Includes only two questions which ask if respondents received help for babysitting and housework.

(5) In some studies such as Brehm and Rahn (1997), confidence in government (constructed with selected variables in "confidence in institutes") is used to represent civic engagement. In Rosenfeld et al. (2001), it is represented by voting rate in presidential campaign and participation in a national voluntary organization.

Table 2: Variable Descriptions

Variable	Description
W2 Personal income (ln)[1]	Logged respondent annual personal income at wave 2 (calculated in 1990 constant dollar values)
W2 Income-to-needs ratio (ln)	Logged income-to-needs ratio of respondent family income at wave 2 (calculated in 1990 constant dollar values)
W1 Personal income (ln)	Logged respondent annual personal income at wave 1 (calculated in 1990 constant dollar values)
W1 Spouses/partners' income (ln)	Logged spouses/partners' annual income at wave 1 (calculated in 1990 constant dollar values)
W1 Bridging social capital[2]	
Group activities participation	An index of respondent frequencies of attending organization activities at wave 1. Totally, 15 types of organizations were included. Larger numbers indicate higher frequencies
W1 bonding capital	
Social activities	An index of 4 types of social activities (frequencies of spending evenings with relatives, a neighbor, a colleague, or a friend) at wave 1
Giving help to kin and friends	An index of giving help to relatives and friends, including child care, transportation, repairs, work around house, and advice at wave 1
Receiving help from kin and friends	An index of receiving help from people, including child care, transportation, repairs, work around house, and advice at wave 1
Perceived emergency support	An index consists of 3 types of assistance: emergency help, emergency small amount of money borrowing, and advice in time of need at wave 1
Age	Categoriezed respondent age at wave 1: 19 to 24; 25 to 34; 35 to 44; and 45 to 59
Education	Categories of respondent educational levels at wave 1: less than high school; high school; some college and above
Race	Categorized race groups: non-Hispanic white; black; and other races
Male	Male = 1, and female = 0
Marital status	Categorized marital status at wave 1: never married; married; and divorced, separated, and widowed
Marital status change	Whether respondents had changed their marital status during wave 1 and wave 2 interviews: no change; changed from non-married status to married status; and change from married status to non-married status
Number of children at home	Categorized variable of the number of children at home at wave 1: no child; one child; two child; and three and more
Working currently	If respondents currently received pay for work at wave 1: yes = 1, no = 0
Good or excellent health	Dummy variable of respondent's self-perceived health status compared with people of same age: good or excellent = 1; very poor, poor, and fair = 0

Table to be continued on next page.

Table 2 (Continued)

Variable	Description
Family public assistance	Dummy variable indicating whether respondent families ever received public assistance before respondents were 16 years old: yes=1; no=0
Address change	If respondents ever changed their address between wave 1 and wave 2: yes = 1; no = 0
Metropolitan Statistical Areas	If respondents resided in metropolitan statistical areas at wave 1: yes = 1; no = 0
Region	Respondent residency location according to the regional definition of the US Census Bureau: the South; the Northeast; the Northcentral; and the West

Notes:

(1) W1 refers to wave one, and W2 refers to wave two.

(2) W2 bridging and bonding capital used in this study is not listed here. For W2 bridging capital, instead of asking about respondent participation in 15 types of voluntary organizations separately, the interviews asked if respondents attended the following four groups of such organizations: (a) service clubs, fraternal groups, or political groups; (b) work-related groups, such as unions, farm organizations, or professional societies; (c) sports, hobby or garden organizations, or discussion groups; (d) church-affiliated groups (not including religious services). For W2 social activities, the questions used for the variables construction at W1 and W2 were the same. For W2 giving help to kin and friends, and receiving help from kin and friends, the questions asking if respondents had given or received help regarding repairing home and cars were eliminated at wave 2, while other questions were the same; for perceived emergency support, the relevant questions were only asked in W1.

Table 3: Sample Characteristics for Analysis of the Impact of Social Capital on Economic Well-Being (Weighted) (N = 3,198)

Variables	Mean/Percent	Std Dev
Dependent Variable		
W2 personal income (ln)	9.26	2.76
W2 personal income ($)	30,179.00	36,638.00
W2 income-to-needs ratio (ln)	1.23	1.12
W2 income-to-needs ratio	4.76	4.10
Independent variable		
W1 bridging capital	4.62	4.42
W1 bonding capital		
W1 social activities	6.00	2.74
W1 giving help	4.24	2.86
W1 receiving help	2.97	2.44
W1 emergency support	2.85	0.60
Control variable		
W1 personal income (ln)	8.68	3.26
W1 personal income ($)	23,961.00	27,132.00
W1 spouse/partner income (ln)	7.69	4.35
W1 spouse/partner income ($)	28,169.00	51,352.00
Age		
19 to 24	9.60%	
25 to 34	39.67%	
35 to 44	34.03%	
45 to 59	16.69%	
Education		
Less than high school	3.98%	
High school	40.95%	
Some college or above	55.07%	
Received degree between W1&W2	7.42%	
Race		
Non-Hispanic white	88.01%	
Black	6.73%	
Other races	5.27%	
Male	41.79%	
Marital Status		
Never married	9.28%	
Married	80.92%	
Divorced, separated, and widowed	9.80%	
Marital status change between waves		
No change	85.01%	
Non-married to married	9.94%	
Married to Non-married	5.06%	

Table to be continued on next page.

Table 3 (continued)

Label	Mean/Percent	Std Dev
Number of children at home		
0	31.79%	
1	23.98%	
2	28.60%	
3+	15.64%	
Working currently	82.62%	
Good or excellent health	86.84%	
Family public assistance	7.19%	
Address change	20.61%	
Metropolitan statistical areas	73.64%	
Region		
South	31.14%	
Northeast	18.37%	
Northcentral	31.42%	
West	19.06%	

Note:
W1 represents wave 1, W2 represents wave 2.

Table 4: Regression Results of the Impact of Individual Social Capital on Economic Well-Being (N = 3,198)

	W2 personal income			W2 income-to-needs ratio		
Variables	Coeff.	S.E.	Pr > |t|	Coeff.	S.E.	Pr > |t|
Intercept	4.92	0.37	<.0001***	-0.88	0.16	<.0001***
Bridging capital	0.02	0.01	0.045*	0.01	0.00	0.008**
Bonding capital						
Social activity	0.00	0.02	0.754	0.00	0.01	0.657
Giving help	-0.01	0.02	0.609	0.00	0.01	0.884
Receiving help	0.03	0.02	0.305	0.00	0.01	0.762
Emergency support	-0.01	0.07	0.896	0.03	0.03	0.347
Personal income(ln)	0.24	0.02	<.0001***	0.03	0.01	<.0001***
Spouse/partner income(ln)	-0.03	0.01	0.029*	0.04	0.01	<.0001***
Age (19-24)						
25 - 34	0.05	0.14	0.708	0.08	0.06	0.160
35 - 44	0.25	0.15	0.107	0.35	0.07	<.0001***
45 - 59	0.08	0.18	0.653	0.38	0.08	<.0001***
Education (Less than high school)						
High school	1.05	0.20	<.0001***	0.65	0.09	<.0001***
Over high school	1.08	0.21	<.0001***	0.88	0.09	<.0001***
R received degree between W1&W2	0.55	0.16	0.000***	0.12	0.07	0.086
Race (White)						
Black	-0.02	0.14	0.909	-0.38	0.06	<.0001***
Other races	-0.25	0.17	0.143	-0.39	0.08	<.0001***
Male	1.08	0.09	<.0001***	-0.01	0.04	0.886
Marital status (Never married)						
Married	-0.59	0.20	0.003**	0.23	0.09	0.007**
Divorced	-0.09	0.17	0.606	-0.01	0.07	0.937
Marital status change between W1 & W2 (No change)						
Non-married to married	-0.23	0.16	0.135	0.46	0.07	<.0001***
Married to non-married	1.23	0.19	<.0001***	-0.29	0.08	0.000***
Number of children at home (0)						
1	0.14	0.12	0.224	-0.18	0.05	0.000***
2	0.30	0.12	0.013*	-0.22	0.05	<.0001***
3^{+}	0.28	0.14	0.051	-0.49	0.06	<.0001***

Table to be continued on next page

Table 4 (continued)

Variables	Coeff.	S.E.	Pr > |t|	Coeff.	S.E.	Pr > |t|
Working currently	1.01	0.13	<.0001***	0.24	0.05	<.0001***
Good or excellent health status	-0.08	0.12	0.481	0.13	0.05	0.013*
Family public assistance	-0.04	0.14	0.778	-0.11	0.06	0.072
Address change between W1&W2	0.08	0.10	0.401	0.00	0.04	0.998
Metropolitan statistical areas	0.21	0.10	0.034*	0.15	0.04	0.000***
Region (South)						
Northeast	0.14	0.12	0.239	0.15	0.05	0.005**
Northcentral	0.05	0.10	0.613	0.04	0.04	0.402
West	0.00	0.12	0.997	0.02	0.05	0.680
R^2	0.27			0.24		
Adjusted R^2	0.26			0.24		
F-value	37.74		<.0001***	33.10		<.0001***
DF	31			31		

Note:
W1 represents wave 1, W2 represents wave 2.
* <.05 ** <.01 ***<.001

Table 5: Sample Characteristics for Analysis of the Impact of Economic Well-Being on Social Capital (Weighted) (N = 3,198)

Variable	Mean/Percent	Std Dev
Dependent Variable		
W2 bridging capital	3.08	2.60
W2 bonding capital		
W2 social activities	7.42	3.04
W2 giving help	3.66	2.31
W2 receiving help	2.72	2.14
Independent variable		
W1 personal income (ln)	8.68	3.26
W1 personal income ($)	23,961.00	27,132.00
Control variable		
W1 bonding capital		
W1 bridging capital		
W1 social activities	6.00	2.74
W1 giving help	4.24	2.86
W1 receiving help	2.97	2.44
W1 emergency support	2.85	0.60
Other control variables		

Note:
1. W1 represents wave 1, W2 represents wave 2.
2. Other control variables not listed on the table are the same as those used for the analysis of the Impact of Social Capital on Economic Well-Being.

Table 6: Social Capital at Two Waves (N = 3,198)

Variables	Mean of wave 1	Range	Mean of wave 2	Range
Bridging capital	4.62 (4.42)	0-43	3.08(2.60)	0-16
Bonding capital				
Social activity	6.00(2.73)	0-16	7.42(3.04)	0-20
Receiving help	2.97(2.86)	0-23	2.72(2.13)	0-15
Giving help	4.24(2.43)	0-19	3.66(2.31)	0-16

Note:

1. The measurement of wave 1 and wave 2 social capital variables is different. Therefore, no means comparison between the two waves is conducted.
2. Numbers within parentheses are standard deviation.

Table 7: Regression Results of the Impact of Economic Well-Being on Individual Social Capital (DV: Group Activities Participation & Social Activities) (N=3,198)

	Bridging capital (Group activity participation)			Bonding capital (Social activities)		
Variables	Coeff.	S.E.	P > |t|	Coeff.	S.E.	P > |t|
Intercept	-0.32	0.37	0.379	8.06	0.47	<.0001***
Bridging capital	0.22	0.01	<.0001***	0.05	0.01	0.001***
Bonding capital						
Social activity	0.06	0.02	0.000***	0.24	0.02	<.0001***
Giving help	0.01	0.02	0.736	0.04	0.03	0.132
Receiving help	0.03	0.02	0.264	0.06	0.03	0.055
Perceived support	-0.07	0.07	0.289	-0.13	0.09	0.159
Personal income(ln)	0.05	0.02	0.005**	-0.03	0.02	0.211
Spouse/partner income(ln)	0.02	0.01	0.139	0.00	0.02	0.991
Age (19-24)						
25 - 34	0.15	0.14	0.291	-0.18	0.18	0.301
35 - 44	-0.07	0.15	0.666	-0.55	0.20	0.005**
45 - 59	0.19	0.18	0.285	-0.30	0.23	0.193
Education (Less than high school)						
High school	0.49	0.20	0.016*	-0.55	0.26	0.034*
Some college and above	1.20	0.21	<.0001***	-0.53	0.27	0.051
R received degree between W1&W2	-0.09	0.16	0.575	-0.28	0.20	0.158
Race (White)						
Black	0.33	0.14	0.020*	-0.70	0.18	<.0001***
Other races	-0.01	0.17	0.952	-0.11	0.22	0.611
Male	0.39	0.09	<.0001***	-0.16	0.12	0.185
Marital status (Never married)						
Married	0.21	0.20	0.298	-0.57	0.26	0.026*
Divorced	0.09	0.17	0.579	-0.26	0.22	0.230
Marital status change between W1 & W2 (No change)						
Non-married to married	-0.08	0.16	0.625	-0.69	0.20	0.001***
Married to non-married	0.08	0.19	0.677	0.49	0.24	0.042*
Number of children at home (0)						
1	0.19	0.12	0.100	-0.11	0.15	0.471
2	-0.07	0.12	0.541	-0.43	0.15	0.005**
3^{+}	0.02	0.14	0.913	-0.62	0.19	0.001**

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Table 7 (Continued)

	Bridging capital (Group activity participation)			Bonding capital (Social activities)		
Variables	Coeff.	S.E.	P > |t|	Coeff.	S.E.	P > |t|
Working currently	0.06	0.13	0.616	-0.86	0.16	<.0001***
Good or excellent health status	0.23	0.12	0.046*	0.24	0.15	0.105
Family public assistance	-0.07	0.14	0.606	-0.23	0.19	0.219
Address change between W1&W2	0.17	0.10	0.088	0.03	0.12	0.814
Metropolitan statistical areas	-0.10	0.10	0.321	0.17	0.12	0.180
Region (South)						
Northeast	0.05	0.12	0.658	0.33	0.16	0.037*
Northcentral	0.13	0.10	0.216	0.11	0.13	0.396
West	-0.03	0.12	0.773	0.23	0.15	0.140
R^2	0.24			0.11		
Adjusted R^2	0.23			0.10		
F-value	32.56		<.0001***	12.37		<.0001***
DF	31			31		

Note:
W1 represents wave 1, W2 represents wave 2.
* <.05 ** <.01 ***<.001

Table 8: Regression Results of Economic Well-Being on Individual Social Capital (DV: Receiving Help & Giving Help) (N = 3,198)

	Bonding capital (Receiving help)			Bonding capital (Giving help)		
Variables	Coeff.	S.E.	P> |t|	Coeff.	S.E.	P> |t|
Intercept	1.34	0.32	<.0001***	0.95	0.34	0.006**
Bridging capital	0.02	0.01	0.055	0.04	0.01	<.0001***
Bonding capital						
Social activity	0.04	0.01	0.003**	0.06	0.01	<.0001***
Giving help	0.10	0.02	<.0001***	0.26	0.02	<.0001***
Receiving help	0.24	0.02	<.0001***	0.10	0.02	<.0001***
Perceived support	0.01	0.06	0.879	-0.04	0.06	0.582
Personal income(ln)	0.03	0.01	0.056	-0.01	0.02	0.583
Spouse/partner income(ln)	0.03	0.01	0.017*	0.02	0.01	0.057
Age (19-24)						
25 - 34	-0.09	0.12	0.464	0.05	0.13	0.688
35 - 44	-0.61	0.13	<.0001***	-0.02	0.14	0.903
45 - 59	-0.89	0.15	<.0001***	-0.23	0.17	0.162
Education (Less than high school)						
High school	0.08	0.18	0.629	0.53	0.19	0.006**
Some college and above	0.50	0.18	0.006**	0.66	0.20	0.001**
R received degree between W1&W2	0.31	0.13	0.019*	0.46	0.15	0.002**
Race (White)						
Black	0.04	0.12	0.724	-0.04	0.13	0.779
Other races	-0.13	0.15	0.402	-0.16	0.16	0.333
Male	-0.29	0.08	0.000***	-0.15	0.09	0.098
Marital status (Never married)						
Married	-0.29	0.17	0.096	-0.03	0.19	0.866
Divorced	0.07	0.14	0.616	0.19	0.16	0.216
Marital status change between W1 & W2 (No change)						
Non-married to Married	-0.42	0.13	0.002**	-0.25	0.15	0.082
Married to non-married	0.86	0.16	<.0001***	0.43	0.18	0.014*
Number of children at home (0)						
1	0.23	0.10	0.025*	0.28	0.11	0.010*
2	0.06	0.10	0.592	0.28	0.11	0.012*
3^{+}	0.41	0.12	0.001***	0.56	0.13	<.0001***

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Table 8 (Continued)

	Bonding capital (Receiving help)			Bonding capital (Giving help)		
Variables	Coeff.	S.E.	P> |t|	Coeff.	S.E.	P> |t|
Working currently	-0.21	0.11	0.052	0.03	0.12	0.800
Good or excellent health status	-0.14	0.10	0.153	-0.07	0.11	0.541
Family public assistance	0.08	0.12	0.539	0.20	0.13	0.130
Address change between W1&W2	0.13	0.08	0.121	0.16	0.09	0.074
Metropolitan statistical areas	0.11	0.08	0.186	0.20	0.09	0.029
Region (South)						
Northeast	0.16	0.11	0.138	0.25	0.11	0.032
Northcentral	0.16	0.09	0.082	0.05	0.10	0.636
West	0.16	0.10	0.118	0.13	0.11	0.261
R^2	0.22			0.20		
Adjusted R^2	0.22			0.19		
F-value	29.41		<.0001**	25.78		<.0001**
DF	31			31		

Note:
W1 represents wave 1, W2 represents wave 2.
* <.05 ** <.01 ***<.001

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