

**A Life Course Investigation of  
Financial Self-Reliance and Economic Pressure in Early Adulthood**

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## **Dedication**

This dissertation is dedicated to Shari Lynn Gudmunson. Above all else, I treasure her companionship and continually admire the unveiling of her beautiful life's work. This dissertation is also dedicated to Dr. Lester Orlando Hepworth, who by example, taught me a great deal about love and dedication. His said "Wear out, don't rust out" and that was how he lived his life. These two were so inspiring for a project like this!

## Abstract

The normative task of becoming financially self-reliant intersects with challenging social and economic conditions making early adulthood a likely time to experience economic pressure. The life course of contemporary cohorts of “emerging adults” can be characterized by multiple paths to adulthood via the ordering and timing of adult roles. Using data from the Youth Development Study (YDS), Eliason, Mortimer, Vuolo, and Tranby (2009) identified five life paths that summarized meaningful role changes from ages 17-30. Each life path had its own distinctive timing of family formation.

Building on Eliason et al., this study examined how participants’ background variables and life paths were associated with financial self-reliance and economic pressure in early adulthood. Longitudinal data were modeled with latent growth curves. The YDS sample in this study consisted of 732 participants, a cohort born in 1973-1974, originating from public schools in the upper Midwest. On average, financial self-reliance increased from ages 23 to 26 then decreased slightly before increasing again prior to age 31. The average level of economic pressure was moderately high from ages 25-31. Financial self-reliance and economic pressure trajectories were not correlated.

Background variables had important selection effects on the life paths of participants. Background variables and the life paths of participants more often influenced initial levels of these financial outcomes rather than their rates of change; however, these initial differences were perpetuated over time. For instance, females experienced greater economic pressure than males at every age. Females were more

likely than males to follow life paths that included early parenthood, and from ages 23-26, females in these groups had lower levels of financial self-reliance. The highest academic achievers had higher and more dynamic “up-down-up again” levels of financial self-reliance whereas low academic achievement was associated with lower and flatter monotonic levels of financial self-reliance. The life paths of those reporting the highest levels of financial self-reliance included marriage earlier in the life course, but these early parenthood groups felt the most economic pressure.

Key words: academic achievement, cohort, economic pressure, emerging adulthood, family formation, financial self-reliance, gender, latent growth curves, life course, marriage, parenthood, roles, transition to adulthood, Youth Development Study

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## Chapter I: Introduction

For contemporary cohorts of young people, the normative task of becoming financially self-reliant intersects with challenging social and economic conditions. This makes early adulthood a likely time in life to experience economic pressure. The extent of change in the life course via the introduction of new roles during the transition to adulthood has the potential to be truly transformative and to rival other turning points in impact and duration of effect (Alwin & McCammon, 2003). The process of “coming of age” in contemporary society is flanked by unique sets of social and economic opportunities and constraints in an increasingly polarized economic environment. How much does one’s background influence the path that a person will follow into adulthood? What features of the life course make a difference in determining the financial conditions and economic experiences of adulthood? These are questions that emerge from a life course perspective on family life. For most young people in America, the transition to adulthood straddles the interval between living in the family of origin and forming the new family of destination. For up-and-coming generations of young people that interval can be short or quite long. Destandardization of the transition to adulthood, coupled with economic calamities worldwide, makes investigation of these issues important and timely.

This chapter begins by outlining the social context of contemporary emerging adults. It discusses how the contemporary transition to adulthood has emerged from the past. It examines how young people are responding to economic conditions. The focus of

this chapter is guided by the major premise of the life course perspective, which is, that each birth cohort forges a somewhat unique set of pathways through life based on historical circumstances, individual adaptations, and social relationships. This is followed by an introduction to the financial outcomes of interest in the study, financial self-reliance and economic pressure. The repercussions of economic pressure in family life provided a strong rationale for the study of this topic. The chapter concludes with a conceptual overview of the analysis plan and research questions.

### **Life Course Changes in the Transition to Adulthood**

Shanahan argued “that the transition to adulthood has become especially diversified since the 1960s” (2000, p. 669). Previous to the 1960s, transition to adulthood was more often a move directly from the family of origin into the family of destination. Young people more often married shortly after leaving home or school, or during the periods of major wars, following military service. Sequential school-work-marriage patterns were more homogenous (Modell, 1989), age-graded norms were better predictors of transition behaviors (compare Neugarten, Moore, & Lowe, 1965 with Settersten & Hagestad, 1996), and there were fewer observed paths to adulthood (Buchmann, 1989). In short, the move to adulthood was more concise and less varied than in the past few decades (George, 1993; Settersten, 2008; Shanahan, 2000).

Forces shaping this period of the life course have led not only to vastly longer periods of time elapsing between adolescence and adulthood, but greater variability, and arguably, greater individual liberty to construct unique paths to adulthood (Arnett, 2007a). These forces included the need for higher levels of education to stay competitive

in a globalizing employment market (Hamilton & Hamilton, 2006), the rise and social acceptance of cohabitation (Bumpass, & Sweet, 1989; Bumpass, Sweet, & Cherlin, 1991), and the advancing age of first marriage and parenthood (Chen, & Morgan, 1991; Rindfuss, Morgan, & Swicegood, 1988; Teachman, Tedrow, & Crowter, 2000).

These demographic shifts have also coincided with a modern, individualized (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985) perspective on adulthood wherein “cultural representations of love and work emphasize flexibility, choice, and impermanence” (Shanahan, 2000, p. 671). Even the criteria whereupon young people considered themselves to be adult has partially shifted from demographic transitions as markers (Benson & Furstenberg, 2007; Molgat, 2007; Shanahan, Porfeli, Mortimer, & Erickson, 2005) to individualistic and subjective criteria such as accepting responsibility for one’s self, making independent decisions, and becoming financially independent (Arnett, 1998). Some have argued that the move from adolescence to adulthood is no longer merely a short transition, but an entirely new period of development in the life course of contemporary young people (Arnett, 2004; Furstenberg, Kennedy, McLoyd, Rumbaut, & Settersten, 2004; Settersten, 2008).

Because of these historical changes there are a number of important points to consider. The advent of an “emerging adult” phase in the life course (Arnett, 2004) characterized by a diversity of life paths (Furstenberg et al., 2004) opens up new empirical questions about the financial realities associated with various paths in the transition to adulthood. Do some paths through this period in between adolescence and adulthood result in higher levels of financial well-being in adulthood? Many young

people in the midst of this period of the life course have questions about their own best way forward (Arnett). Parents and their 18-25 year old children have differing ideas about what it takes to become adults. For example, parents and children differed in the emphasis they gave to norm compliance, family capacities, and role transitions for achieving adulthood (Nelson et al., 2007). The empirical literature reflecting individual feelings of uncertainty about this unscripted phase of the life course should be met with longitudinal studies that provide answers about how different paths through life are associated with financial conditions in early adulthood. Such an approach might produce information that is useful in long-term planning and structuring of life course.

In this quickly expanding area of research, there are still relatively few developmental studies that bridge the periods of childhood (including adolescence) and early adulthood—or what Arnett (2004) refers to as “emerging adulthood” In this study, childhood refers to ages 0-18, although the first wave of data collection took place at age 14, Early adulthood, in this study, refers to ages 18-31 and within this period, life paths, and the financial self-reliance and economic pressure outcomes were measured. This study sought to investigate the effects of background variables and life paths on financial self-reliance and economic pressure. Background variables refer to demographic factors and childhood achievements that could influence the paths taken in the transition to adulthood or directly influence financial self-reliance and economic pressure. A life path refers to a coherent pattern of movement through adult roles over time. These variables are discussed at length in later chapters; but first, the social context of early adulthood is further explored.

## **Cohort Response to Economic Opportunities and Constraints**

The economic burdens that threaten contemporary young adults are linked to societal structure and to individual lived experience. Although societal conditions require that younger cohorts obtain higher levels of education to attain desired work opportunities (Hamilton & Hamilton, 2006), individuals do this more or less efficiently. A portion of students took more than the minimum course load for a degree, switched majors more often, incurred higher levels of debt than needed to finish their educations, or left school without completing degrees (Arnett, 2004; Christie, Munro, & Rettig, 2001). Younger cohorts left home and became financially independent from their parents later in their lives than previous cohorts (Lee & Mortimer, 2009). Many upper- and middle-class parents offered financial and residential support to their children attending college (Buck & Scott, 1993; DeMarco & Berzin, 2008; Mulder & Clark, 2002), and this often helped their children achieve academic success (White & Lacy, 1997). On the other hand, recent rises in consumer debt, lowered savings rates and mortgage problems suggest possible difficulties managing money. Financial mismanagement could lead to economic pressure as does the lack of resources. Thus, the relationship between receipt of financial support from parents and the ability to eventually become financially self-reliant is unclear.

Career establishment is dependent on social conditions as well as individual development. A declining labor market in the past decade reflects severe problems, including the bankruptcy of large corporations, job losses due to restructuring, and declines in benefits. These factors were largely beyond the control of individuals. Yet,

postponed career decision making and vacillation among young people (Arnett, 2004) may mean that individuals were less prepared to engage in a specific profession, less proficient, or less willing to remain committed to a chosen career. Although job markets and individual adaptations are reciprocally related, there yet may be some personal floundering, inhibiting long-term goal setting and attainment (Lee & Mortimer, 2009; Staff, 2007).

From a practical standpoint, it is unlikely that the structural elements of American society that contributed to family economic pressure will immediately change for the better. However, each young person who navigates the challenges and opportunities that are afforded to them may have some latitude to contribute to the path of their own lives (Arnett, 2007a; Hitlin & Elder, 2007). This may be especially so during the expanded life interval that takes place after leaving one's family of origin and prior to establishing a family of destination. The financial challenges associated with being single, in college, and having few family demands can be very different from the challenges associated with maintaining a household with a partner, working full-time, and raising children. The corresponding differences in one's ability to become financially self-reliant and avoid economic pressure could be dramatic. In fact, some theorists believe that it is primarily the relative affluence of many single individuals, along with the strong social and financial support extended by many parents that permits exploration, elongation, and variation of life paths during this period of the life course (Booth & Crouter, 1999; Bynner, 2005; Twenge, 2006). Many parental and institutional supports (e.g. student loans) may be offered with the expectation they would be used to develop human capital,

such as education and job skills, but these too can be squandered, leaving recipients with little more than precocious appetites developed by a premature affluent lifestyle (Bachman, 1983). Childhood background as well as the ordering and timing of developmental transitions between adolescence and adulthood may serve as indicators of opportunity, focus, preparedness, and successful life achievement (Larson, Wilson, Brown, Furstenberg, & Verma, 2002; Schulenberg, Bryant, O'Malley, 2004). The extent to which individual preparations for adult economic demands were made early in life could affect young people's ability to become financially self-reliant and avoid economic pressure.

### **Conceptualizing Financial Outcomes of Early Adulthood**

This may be the first study that examines economic pressure within the stage of early adulthood. Many studies have examined economic pressure in families with middle-aged parents, among elder individuals, or across a wide spectrum of adult ages. These studies implicitly assumed that most respondents have independent financial households, and that economic pressure pertains to financial difficulty getting along independently. This assumption is not feasible when considering the early adulthood period, when there may be varying rates of financial self-reliance because a certain level of post-adolescent financial dependence on parents is normative for many American families. As a result, financial pressure and self-reliance may vary more independently than in adulthood. Thus, this study considers both financial self-reliance and economic pressure. In this section these constructs are defined and placed in the context of the study. Considerably

more has been published about economic pressure than self-reliance and this is reflected in this introduction to the concepts.

### **Financial Self-Reliance**

Two other phenomena appeared in the literature that were closely-related to financial self-reliance, which itself, appears less often. The first was economic self-sufficiency (Hall, Graefe, & De Jong, 2010; Hardy et al., 1997), and the second was financial independence (Lee & Mortimer, 2009; Whittington & Peters, 1996). This study calls for use of a distinct term for conceptual and methodological reasons. Although financial self-reliance may be considered synonymous with economic self-sufficiency, the term sufficiency carries the connotation of adequacy or plenty. In this study, it was important to avoid the implicit suggestion that merely living off of one's own income, means a person has a "sufficient" amount of resources (Hawkins, 2005). No assumption was made that financial self-reliance and economic pressure would be correlated, although the question was asked. Financial self-reliance and economic pressure were thought of as dimensions of economic experience. If it happens that some participants live entirely on their own earnings but at the same time have high levels of economic pressure, "self-reliance" is a better description of their experience than a word that suggests some level of prosperity. Likewise, the term self-reliance would provide a good representation of the construct if economic pressure was low.

Financial independence also was not a suitable term given its usage in the literature; typically it refers to independence from parents. The phenomenon of interest in this study was broader. Here, financial self-reliance for young adults was defined as

meeting one's own financial needs without the assistance of parents or government aid programs. It was measured as a percentage of the total financial living expenses that were paid for by one's own income, the income of a spouse, or other personal resources such as scholarships and student loans. With this definition, financial self-reliance included financial independence from parents, independence from government aid, and other sources<sup>1</sup> beyond self and spouse. In other words, to be fully self-reliant, according to the definition used in this study, a person must not receive financial support from parents or from government assistance. However, individuals may be termed "self-reliant" even if they were partially or fully supported by a spouse. The review of literature examined these components of financial self-reliance because they were usually discussed separately. In this study, it was considered important to draw a firm distinction between self and spouse support and the external parental and governmental supports to better represent successful financial advancement to adulthood.

### **Economic Pressure**

Economic pressure lies at the intersection of material hardship and everyday lived experience for families facing economic difficulties. Conger and Donnellan defined economic pressure as "a syndrome of events or conditions that give psychological meaning to the stressful experiences of economic hardship" (2007, p. 179). In other words, economic pressure is the worry, frustration, and difficulty that ensue in difficult financial times. It is the psychological stress and concern that accompany the inability to

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<sup>1</sup> The author examined dependency on various non-individual or spousal sources of financial support in the YDS and the vast majority of this support was from parents or government sources. Support from other sources such as friends or extended family was rare and when reported was usually in very small proportions.

pay bills, meet financial deadlines, and deal with threats to solvency. Economic pressure is the toll of economic hardship in multifaceted ways, mentally, emotionally, socially, and physiologically, and a primary way in which economic hardship has been linked to undesirable outcomes in the lives of individuals and families (Conger, Reuter, & Conger, 2000; Grossi, Perski, Lundberg, & Soares, 2001; Gudmunson, Beutler, Israelsen, McCoy, & Hill, 2007).

Many studies have documented the contemporaneous circumstances leading to economic pressure, including factors such as low-income and poverty (Gutman & Eccles, 1999; Jackson, Brooks-Gunn, Huang, & Glassman, 2000; McLoyd, 1990), income loss and job loss (Barrera et al., 2002), economic recession and depression (Elder, 1974), indebtedness (Whitbeck et al., 1991), and other forms of material hardship (Conger et al., 2000). The focus of existing research has been promising for policy development and institutional change. This research may have less application for individuals and families with interests in prevention and minimization because most of the research has treated economic pressure either as an exogenous variable, or one influenced by non-personal factors. By focusing mostly on the sequelae of economic pressure, personal and family-level studies tended to center on coping and resilience (Conger & Conger, 2002; Elder, 1995; Wadsworth & Compass, 2002). To better understand how economic pressure may be prevented or minimized, work is needed that begins to identify predictors that occur earlier in the life course. Disseminating such information could enable individuals and families to alter the life course in ways that better insulate them from economic pressure. Given the present state of research on economic pressure, it seems the time has come to

investigate some largely unexamined roots of economic pressure, and these could lie partly in the structuring of the life course.

Many factors that have been investigated as the causes of economic pressure typically seemed beyond the grasp of individuals to manage or control (i.e. a plant closing). The present study diverges from this more external approach through an examination of factors that might influence the dynamics of economic pressure in early adulthood based upon individual paths through post-adolescent life.

Economic pressure may be greater in early adulthood than in any other developmental period of life. This was documented by research examining associations between age and levels of economic pressure across a range of birth cohorts at single points in time. Two studies examining measures very similar to economic pressure across seven decades of adulthood (from *under 30 to 80 and older*) found that economic pressure was highest in the first two decades of adulthood with steady age-related declines across the age spectrum (Drentea, 2000; Mirowsky & Ross, 1999a). Although Hardy and Hazelrigg (1999) disputed one of these studies on a few conceptual points, they provided no new evidence that economic pressure in the latest decades of life was greater than in early adulthood. Furthermore, consistency between these studies and earlier studies of material hardship and age (Easterlin, 1987; Mayer & Jencks, 1988; Ross & Huber, 1985) suggested that social and economic age-graded conditions in early adulthood were more likely to be the causes of economic pressure than the economic changes of the past several decades. Nevertheless, recent global and national economic crises have drawn attention to matters of financial concern in the day-to-day experiences

of individuals and families. News media have regularly reported how economic difficulties have impacted lives. Although difficult economic circumstances influence everyday life in a number of ways, hardship is most likely to become socially and psychologically relevant through its influence on economic pressure. In other words, the negative personal and social consequences of objective economic conditions are transmitted via economic pressure, which is a subjective appraisal.

The life course perspective posits that each birth cohort that passes into adulthood will encounter a partially unique set of economic opportunities and constraints they must learn to adapt to in order to achieve their financial goals. Present cohorts of young adults are no exception, and variation among them translates into financial success for some and financial difficulty for others. Although there is a general, rapidly growing body of research on present cohorts of young people, relatively few studies have linked decision-making, actions, and paths through life to outcomes in the next phase of adulthood (Bell & Lee, 2006; Marini, Shin, & Raymond, 1989; Salmela-Aro, Aunola, & Nurmi, 2008; Schulenberg et al., 2004; Wickrama, Conger, Lorenz, & Jung, 2008). Furthermore, no studies were found that showed how development in the transition to adulthood impacted economic pressure in early adulthood. The present study was designed to contribute to this gap in the literature by investigating how the structuring of the life course contributes to economic pressure in early adulthood.

It is possible that economic pressure is so common in early adulthood that most young people will encounter it. This is possible, regardless of how well prepared a young person has become for meeting the economic demands of adulthood. Yet, individuals

forging different paths to adulthood might vary in their ability to acquire the human capital needed to take advantage of economic opportunities and reduce economic burdens and pressures during this period. This was one reason it was important to study dynamic changes in economic pressure, including its trajectories, in early adulthood.

Another reason to consider early adulthood trajectories is the tendency that economic pressure will continue into middle adulthood and persist into old age (Hungerford, 2007). Adults who are able to minimize economic pressure in early adulthood may benefit long-term by avoiding the cumulative disadvantages to health and well-being that occur across the life course as a result of persistent economic pressure (Kahn & Pearlin, 2006; Lynch, Kaplan, & Shema, 1997; Mirowsky & Ross, 1999a; Pudrovska, Schieman, Pearlin, & Nguyen, 2005; Zimmerman & Katon, 2005).

### **The Current Study**

Recent U.S. reports have shown that by ages 25-27 large portions of young people have moved through a number of developmental and social transitions that profoundly shape the financial opportunities and constraints they will encounter in adulthood (Cohen, Kasen, Chen, Hartmark, & Gorden, 2003; Galambos, Barker, & Krahn, 2006; Schulenberg et al., 2004). Moving away from parents, transitioning from school to stable full-time work, marriage, and parenthood are major transitions in the life course of many individuals that give definition to the financial capacities and responsibilities that individuals must balance as they move through adulthood. In many ways, these transitions can lead to a piling up of financial obligations in early adulthood that contribute to the worries and difficulties comprising economic pressure. Moving away

from home and becoming more independent intensifies a young person's need to generate income, pay bills, manage money, and deal with financial demands (Mulder & Clark, 2002). School-to-work transitions are often associated with the initiation of student loan payments, relocation costs, and heightened transportation demands. In addition, the family transitions of marriage and parenthood may increase housing costs and expenses associated with family life. These challenges are expected to impact the young person's levels of financial self-reliance and economic pressure.

To address these matters, two theoretical perspectives were considered; the life course perspective on transitions to adulthood (Elder, 1998a) and an emerging adulthood perspective on early adulthood (Arnett, 2000a). The life course perspective is a broad principles-based approach with tenets outlining, among other things, the importance of attending to age cohorts. Historical forces and linkages to the lives of older and younger generations give structure to paths through life. A life course perspective attends to the historical forces that have lengthened the move from adolescence to adulthood, making it a longer and more gradual process among contemporary young people. Emerging adulthood literature provided descriptive information about the lived experience of those moving into adulthood in recent times, with an emphasis on the divergent paths that characterized the lives of contemporary young people. More discussion of the ways that the life course perspective and an emerging adulthood perspective on early adulthood informed this study was included in Chapter 2.

The current study is an investigation of change in financial self-reliance from ages 23-31 and in economic pressure from ages 25-31 using latent growth curve methodology.

Figure 1. Conceptual Overview of the Analysis Plan

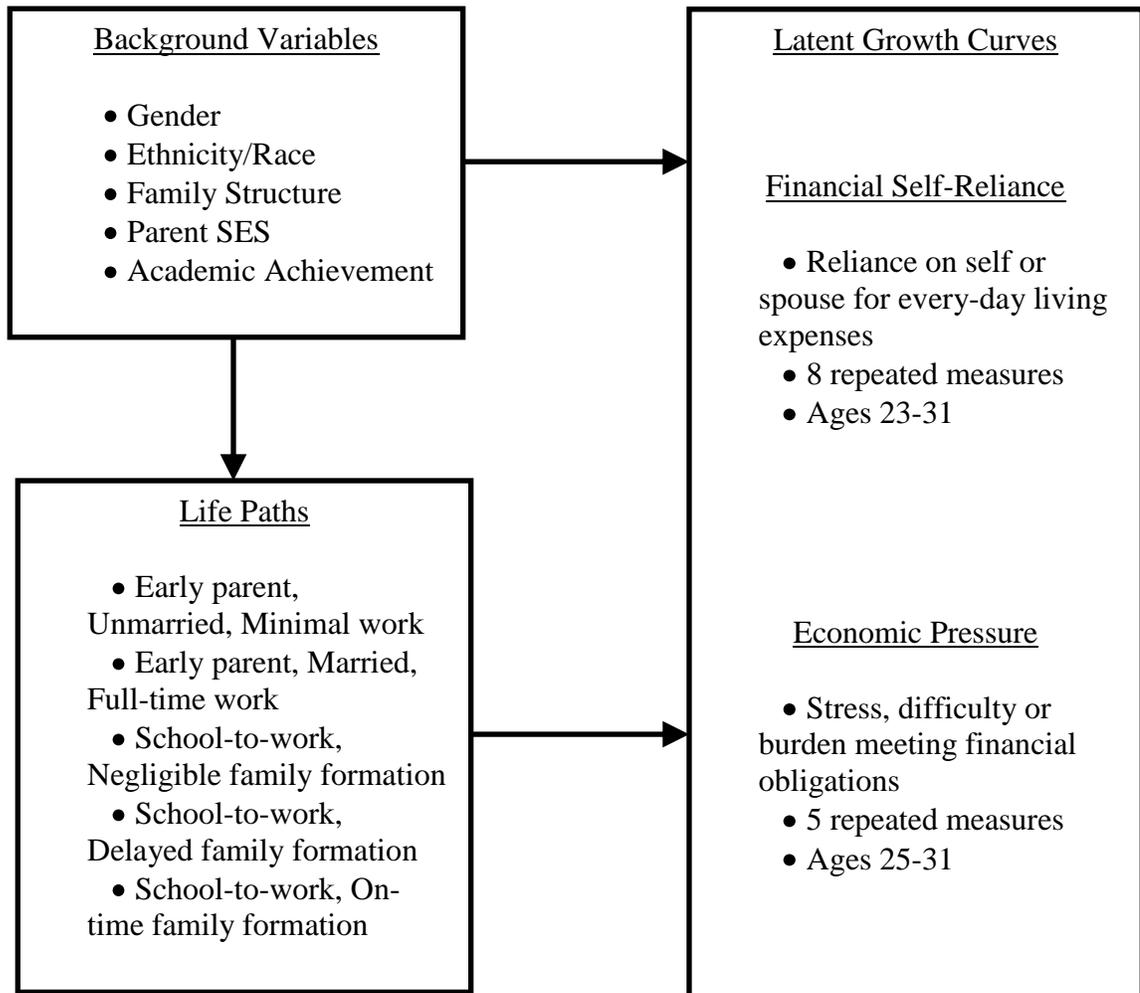


Figure 1 provides an overview of the analysis plan, showing the key variables and relationships in the study. These relationships will be further specified in a set of research questions. The first of two groups of predictors is a set of background variables. These variables include gender, ethnic/racial minority status, family structure, parent socioeconomic status, and high school academic achievement. The background variables were measured in the childhood waves of the study, at ages 17 or younger.

The second group of predictors is a set of life paths that were recently discovered in the YDS sample (Eliason et al., 2009). (These are briefly presented here and further details are included in the measures section of Chapter 3.) Eliason and his colleagues investigated the timing and sequencing of transitions to adulthood from ages 17-30 based on various role configurations including whether a respondent was a) living with parents, b) in school, c) working full time, d) married, or e) was a parent. The term “life path” is used in this study to refer to a particular pattern of movement through adult role configurations over time. For example, living at home with parents as a single person, without children while attending school full-time, is an example of a particular role configuration that, over time, could evolve into a different role configuration, such as having moved away from home, finished school and working full-time, as a married parent. The important point is that role configurations are contingent on prior role configurations and change in predictable ways over time (Elder, 1998b; Koc, 2007). The goal for Eliason and his colleagues was to determine whether a smaller set of *latent life pathways* (empirically determined patterns) could adequately summarize the observed patterns in the lives of YDS participants through a special application of latent class analysis. Five latent life pathways (hereafter referred to as life paths) adequately described the life experience of the participants, as each respondent had a high probability of inclusion in one of the five groups. The group labels in Figure 1 provide clues as to the prominent features of each life path and each path is described in greater detail in Chapter 3. A number of research questions inquire about the processes suggested in Figure 1.

## **Research Questions**

In this section, each research question is stated and then discussed. In most instances the questions build on each other. For instance, understanding how background variables predict the transition to adulthood life paths (RQ1) is a necessary step for understanding how life paths may mediate the influence of background variables on financial self-reliance and economic pressure. Likewise, deriving a baseline growth-curve model of change in the outcomes (RQ2) is also an essential step before moving on to introduce predictors of the financial self-reliance and economic pressure trajectories.

It is important to note that, although life path variables are used as independent variables and are referred to as predictors, there is no assumption of a causal relationship between life paths and the measures of financial self-reliance and economic pressure. In fact, the financial trajectories that are considered outcomes in this study overlap in time with the life course events that constitute the life paths. Although, the research questions posed in this study call for examination of financial self-reliance and economic pressure as outcomes, other relationships between the outcomes and the life paths that are not examined in this study could also exist.

Due to the lack of extant literature investigating the types of relationships assessed in this study, no hypotheses were formulated. Instead, research questions informed the direction of analyses. The findings may provide important baseline information that can be used in future studies for generating hypotheses.

*RQ1: Do background variables, including gender, ethnic/racial minority status, family structure, parental SES, and high school academic achievement predict transition to adulthood life paths?*

In this study, background variables are not simply conceptualized as control variables. It is important to understand how background variables could be related to the life paths that individuals select, and are selected into. Moreover, this research examines whether the influence of background variables work primarily by placing individuals on a path through early adulthood that corresponds with certain patterns of financial self-reliance and economic pressure, or whether background variables have impacts that are independent of the effects of the life paths. The first step in making these determinations is to understand the influence of background variables on selection into life paths (see the downward arrow in Figure 1).

*RQ2(a & b): What type of trajectories best describe change in a) financial self-reliance and b) economic pressure in early adulthood? Are there significant amounts of variation in individual patterns of change over time?*

The horizontal arrows in Figure 1 represent variables predicting changes in the trajectories of financial self-reliance and economic pressure over time. However, as a practical matter, the repeated measures of financial self-reliance and economic pressure need to first be examined to see whether there is a common type of trajectory with similar

patterns of change over time. Is there change over time? Is the change linear or curvilinear? To determine the types of change, various latent intercept and slope variables defining different plausible patterns will be examined for fit. If there are not enough similarities in the way these variables change over time among the sample, a latent growth curve model will simply not fit the data. A second important determination must also be made. Questions about what predicts changes in the outcomes assume there are systematic variations in patterns between individuals. If each individual in the sample had essentially the same experience, there would be no differences to predict. The evidence for differences in the sample is found in significant variances around the average trajectory. Thus, the second research question calls for baseline information about the dependent variable trajectories and whether there is enough variation to test for systematic differences related to the independent variables. Research questions 2-6 assume that baseline models with a particular type of trajectory fit the data and there will be significant variation among the participants.

*RQ3(a & b): Do background variables, including gender, ethnic/racial minority status, family structure, parental SES, and high school academic achievement explain differences between individual trajectories of change in a) financial self-reliance and b) economic pressure in early adulthood?*

This third question addresses the association between background variables and the trajectories of economic well-being of interest in this study. This step will provide a

baseline understanding of the effects of background variables on the growth curves. The resulting parameters can be examined both before and after the introduction of the life paths in the equations in a later step.

*RQ4(a & b): Do the life paths discovered by Eliason et al. (2009) mediate the effects of background variables on trajectories of a) financial self-reliance and b) economic pressure?*

Building on the findings that will answer the previous research questions, the next step is to incorporate both the background variables and the life paths as predictors of the latent growth curves of financial self-reliance and economic pressure. Comparing the parameters of equations with and without the life pathways makes it possible to understand the extent to which selection into particular life paths mediate the relationships between background variables and the outcome trajectories. This kind of sequence of testing for mediating processes (RQ2-RQ4) is advocated by methodologists Baron and Kenny (1986).

*RQ5(a & b): Do gender and life paths interact in predicting a) financial self-reliance and b) economic pressure trajectories?*

The experience and meaning of the life pathways could vary substantially for males and females, especially with regard to early parenthood. Thus, it was important to

consider how males and females in each of the life paths could differ in their trajectories of financial self-reliance and economic pressure. Beyond the additive effects of gender, certain life paths might accentuate gender differences. In other words, there could be interaction effects. (Note there was no attempt to portray these in Figure 1.)

*RQ6: Are the financial self-reliance and economic pressure trajectories associated with one another?*

The final research question addresses whether financial self-reliance and economic pressure might be associated with each other. The research design for this project generally does not test both latent growth curves at the same time in order to reduce complexity to a manageable level. However, it will be possible to get some idea about the associations of the curves. For example, it was possible to determine whether initial levels of financial self-reliance influenced initial levels of economic pressure or its change over time and vice versa. In other words, the correlation of intercepts and slopes between the constructs were examined.

## Chapter II: Review of Literature

This chapter consists of three major sections. The first section reviewed literature that connected this chapter to themes from the first chapter. A review of research on the two main components of financial self-reliance, financial independence from parents, and the use and nonuse of government assistance, was followed by a look at potential reasons for economic pressure occurring in early adulthood and its consequences. This in-depth look at economic pressure added to the rationale for the study and underscored the need to understand the effects of a set of life course predictors of financial self-reliance and economic pressure.

The second major section investigated what is known about background predictors from a life course perspective with respect to financial self-reliance and economic pressure or related constructs. The importance of background was emphasized, followed by discussion of central transitions that involve the acquisition of adult roles.

The final section reviewed principles from conceptual frameworks that guided the study. The life course perspective undergirding this study demanded attention to historical circumstance and placed emphasis on *who* was being studied, especially with respect to age and birth year. These facts were implicated in the discussion of the principle of lifelong development, modeling within cohorts, and transition timing. A discussion of an emerging adulthood perspective on early adulthood research followed. Emerging adulthood perspectives were introduced because of the descriptive view they provide of cohorts “becoming of age” in contemporary times. Although not strictly a

theory, emerging adulthood literature contained predictions, such as the idea that a diversity of life paths might characterize the transition to adulthood for many generations to come. These theoretical ideas had important implications for the study of life paths.

### **Components of Financial Self-Reliance**

The first chapter indicated that financial self-reliance, as conceptualized in this study, was essentially equivalent to financial independence from parents *and* government financial assistance. The extant research has largely focused on one or the other component of external financial assistance independent of the other. Each of these components was, in turn, addressed in this chapter.

### **Financial Independence from Parents**

The contemporary process of becoming financially independent from parents was described by Arnett (2004) as a negotiated and gradual process between parents and children extending into early adulthood. Yet, the process was not uniformly the same for all. Resources, demographic factors, and life course activities played a role in becoming financially independent of parents (Swartz, Uno, Mortimer, Kim, & O'Brien, in review). Children's higher wages and wage opportunities resulted in financial independence from parents at earlier ages (Whittington & Peters, 1996). Sometimes, the effects of parent and child resources were found to be dependent on age. Post-adolescence, children were more likely to receive support at a younger age (Eggebeen & Hogan, 1990; Rossi & Rossi, 1990; White, 1992). In one study, parent income had curvilinear effects on the age of financial and residential independence; it increased the likelihood of remaining home up

to about age 19 but older children of higher income families became financially independent sooner (Whittington & Peters).

Attending to the experiences of a particular cohort is important, because historically, contemporary parents of young adults were more willing to extend financial support to children in their 20s than was observed among past cohorts (Coleman, Ganong, & Cable, 1997; Goldscheider & Lawton, 1998). A report based on the YDS cohort showed that at age 24, financial independence from parents was a function of the economic climate of the family. Parents who socialized their children toward work boosted their children's sense of self-efficacy and their ability to earn income (Lee & Mortimer, 2009).

### **Use of Government Assistance**

Except for the large body of research on the use of public assistance among young single mothers, little research has described the general use of government assistance in the transition to adulthood. However, reliance on government assistance in early adulthood was strongly linked to parenthood at a young age (Maynard, 1995), growing up in poverty (Hao, 1995; Pepper, 1995; Rank & Cheng, 1995), and having poor mental health (Jayakody, Danziger & Pollack, 2000).

In 1996, federal welfare laws were changed to make government assistance temporary with the goal of increasing "self-sufficiency" (Hawkins, 2005). However, many families whose assistance was forcibly ended were not able to find the type of work that provided for all of their basic financial needs. Furthermore, when there were young children in the family, low-wage jobs were sometimes not enough to cover the basic costs

of childcare, transportation, and other work expenses (Edin & Lein, 1996). Thus, while levels of financial self-reliance might have forcibly increased through removal of government assistance, financial pressure likely increased as a result. This sort of inverse relationship between financial self-reliance and economic pressure might have been specific to groups who relied on government assistance.

Recent trends in spending for social and family policies moved toward specific benefits rather than general cash assistance (Bogenschneider & Corbett, 2010). These benefits attempted to address the needs of families and particularly the needs of young children. Thus, individuals in families with children were frequently more eligible for government assistance compared to single individuals.

### **Reasons for Economic Pressure in Early Adulthood**

A number of deeply rooted conditions in modern society increased the chances that young adults would encounter economic pressure. These included a confluence of social, biological, political, and economic influences on this period of the life course. For many young people, the transition to adulthood, although it was a long one, often coincided with transitions away from families of origin where material support was provided and the formation of new families replete with economic demands. Many young people included satisfying employment, marriage, and parenthood as central life aspirations (Hooker, Fiese, Jenkins, Morfei, & Schwagler, 1996; Johnson, Oesterle, & Mortimer, 2001; Plotnick, 2007; Segal, DeMeis, Wood, & Smith, 2001). Yet, on average, these aspirations took a decade or more to accomplish after leaving home (Arnett, 2000a; 2004), and in modern society there were many possible detours (Shanahan, 2000). These

aspirations were accompanied by anticipated and unanticipated financial consequences. Moving away from parents and quitting school or completing post-secondary education usually meant losing parental financial support (Sneed et al., 2006). In recent decades, the number of graduates holding student loans grew, as has the amounts of these loans (King & Bannon, 2002). Loose ties between educational systems and employment sectors in the U.S. (Mortimer, Staff, & Oesterle, 2003) made job searches difficult and costly for those looking for long-term, career-related work. These problems were exacerbated by the deteriorating labor market position of labor force entrants.

Entry-level jobs typically populated by young people, generally yielded lower levels of income and benefits than more senior appointments. Young adults had fewer assets than older age groups. Young adults were also more likely to be employed in non-standard work arrangements which often did not include the benefits of health insurance and retirement plans (Kallenberg, Reskin, & Hudson, 2000). In addition, young adults were less skilled at managing personal financial resources, and without as much wealth accumulated, were typically unable to live as well as aged individuals on similar levels of income (Mirowsky & Ross, 1999a, 1999b). Less seniority in the workplace often translated into less job security which translates into greater needs to be flexible to meet demands such as retraining or relocating.

The early years of marriage and parenthood were also markedly different than later years, with many potential financial implications. Younger families were more likely to be in an accumulation phase as they acquired adequate housing, reliable transportation, and durables such as furniture, machinery, and clothing (Land & Russell,

1996). Learning to care for children and meeting their needs drew time, mental attention, and energy away from the personal development of human capital, income growth, financial management, and planning (Avellar & Smock, 2003). In addition, the potential for marital disruption was greater in the early years because, in the beginning, marriage and parenthood required more adaptation (Twenge, Campbell, & Foster, 2004).

Contemporary cohorts of young adults also faced financial challenges and opportunities related to their passage through a unique historical time. For instance, young adults needed to achieve high levels of education in order to obtain coveted, well-paying jobs with benefits (Hamilton & Hamilton, 2006). This happened at a time when education costs vastly outpaced general levels of inflation (Archibald & Feldman, 2008; Baumol, 1993). The costs associated with energy, health care, and housing also outpaced inflation in recent times (Baumol; Whittington & Peters, 1996) and were major concerns for young adults. The state of the social security system in the U.S. was uncertain; some feared there would be greater demands upon those paying into the system to ensure a balance of payouts to the large baby-boom generation nearing retirement age (Board of Trustees, 2009). Poor self-regulation in the country's financial institutions led to bank failures and banks being propped up by massive government bailouts, all of which made it more difficult to obtain credit for housing and transportation and increased tax burdens.

These recent challenges painted a relatively bleak picture for young adults hoping to settle into long-term careers and begin living the "American dream." Nevertheless, many young people were privately optimistic about their own chances for success, even when they suspected that society as a whole, including their contemporaries at the same

life stage, would not fare as well (Arnett, 2000b). Qualitative studies of young people in the transition to adulthood discovered that financial matters were among the foremost issues in the minds of young people as they became adults (Arnett, 1998; 2000b; Sassler, Ciambrone, & Benway, 2008). Financial concerns shaped the ways that young people made short-term and long-term decisions, evaluated opportunities, and actively structured their own lives. Sometimes financial decisions were made based on the excitement of new opportunities, other times as a matter of routine, and at other times based on fear (McKenna, Hyllegard, & Linder, 2003). Compared with previous cohorts, contemporary young people were residentially and financially dependent on parents for longer periods of time, spent more time gaining an education, had more career postponement, career breaks, and job changing, more frequent cohabitation, and later marriage and parenthood (Arnett, 2004). Yet, it was unclear whether these changes in the life course helped them to avoid or effectively deal with economic pressure in early adulthood. The diversity of paths to adulthood through these transitions provided the opportunity to discover whether life course structures were long-range predictors of economic pressure.

### **Consequences of Economic Pressure**

Economic pressure was directly related to the mental health, cognition, and stress experienced by individuals. The harmful effects that individuals experienced as a result of economic pressure, in turn, impacted interactions and relationships with other family members. On an individual level, adults in the family who had the responsibility of providing or managing material needs were most exposed to the harmful effects of financial pressure (Ross & Huber, 1985). In contexts where dual-income households

were the norm, economic pressure typically affected married partners similarly (Gudmunson et al., 2007). Links between economic pressure and depression or other forms of emotional distress were confirmed in numerous studies including studies of the Great Depression (Elder, 1974), the U.S. Midwest farm recession of the 1980s (Conger & Conger, 2002; Elder, Conger, Foster, & Ardel, 1992; Johnson & Booth, 1990), and elsewhere among economically distressed families (Brody et al., 1994; Jackson et al., 2000; Vinokur, Price, & Caplan, 1996). Strong and consistent findings supported the proposition that economic pressure was associated with elevated levels of depression. Economic pressure also contributed to individual levels of anxiety (Leinonen, Solantaus, & Punamaki, 2002) and spousal hostility (Conger et al., 1990). Economic pressure also increased feelings of loneliness (Lempers & Clark-Lempers, 1990). Interpersonal stress, including frustration, negativity, and coping difficulties, were also positively linked to economic pressure (Gomel, Tinsley, Parke, & Clark, 1998; Kwon et al., 2003; Skinner, Elder, & Conger, 1992).

The effects of economic pressure on individuals carried over into family relationships. Economic pressure had a detrimental influence on cognitive conditions that would otherwise have promoted resiliency, including parents' self-esteem (Mayhew & Lempers, 1998), general self-efficacy (Mistry, Lowe, Benner, & Chen, 2008), parental self-efficacy (Brody, Flor, & Gibson, 1999; Elder, Eccles, Ardel, & Lord, 1995), and positive affect among parents (Whitbeck et al., 1997). Marital conflict was the result of individual emotional problems sparked by economic pressure (Conger et al., 1992, 1993, 2002; Conger, Ge, Elder, Lorenz, & Simons, 1994; Wadsworth & Compass, 2002).

Marital conflict impaired marital quality and stability and affected the development and wellbeing of children in the family.

Economic pressure led to losses in spousal social support (Simons, Lorenz, Conger, & Wu, 1992) at times when support was badly needed. In studies this included the withdrawal of personal warmth (Conger et al., 1990) and quality couple time together (Gudmunson et al., 2007). Individuals who experienced financial strain due to job loss suffered from the withdrawal of spousal emotional support (Vinokur et al., 1996). Therefore, economic pressure and the individual outcomes associated with it took a toll on couple interactions and relationships which had negatively impacted marital quality and stability (Conger et al., 2000; Johnson & Booth, 1990).

Economic pressure impaired child development in several different ways. The most obvious was through the economic losses usually accompanying economic pressure. Parents had fewer resources to provide to their children, which resulted in fewer opportunities for growth and diminished conditions for development (McLoyd, 1990). Children were often aware of the economic pressures faced by the family and were directly influenced as a result. For instance, Lempers, Clark-Lempers and Simons (1989) found that economic pressure was directly associated with higher levels of adolescent depression/loneliness and delinquency/drug use. In another study, family economic pressure was associated with decreased adolescent self-esteem (Whitbeck et al., 1991). Girls' psychological distress from family financial hardship was greater when mothers disclosed their financial concerns to their daughters (Lehman & Koerner, 2002). Adolescents also experienced pressure firsthand when economic cutbacks by parents

forced them to make cutbacks of their own (Conger, Conger, Matthews, & Elder, 1999). Yet despite the direct influences of family economic pressure on children, the overall evidence suggests that children were more negatively distressed by the behaviors of their parents who were experiencing economic pressure than they were distressed by economic pressure directly.

Parents experiencing economic pressure tended to behave in ways that negatively influenced their children's prosocial development. First, they elevated the negative emotional climate in the family (Forkel & Silbereisen, 2001) through their irritability (Skinner et al., 1992), hostility (Conger et al., 1994), loss of self-esteem (Mayhew & Lempers, 1998), and negative affect (Whitbeck et al., 1997). Just as importantly, positive parenting behaviors declined and negative parenting behaviors increased in response to economic pressure (Jackson et al., 2000). Positive behaviors that decline as a result of economic pressure included parental nurturance (Conger et al., 1992; 1993; 2002; Lempers et al., 1989), support, and involvement (Barrera et al., 2002; Lempers & Clark-Lempers, 1990; Mayhew & Lempers; Whitbeck et al., 1991). Harsh and inconsistent parental discipline increased in times of economic pressure (Leinonen et al., 2002; Lempers et al., 1989; Robila & Krishnakumar, 2006; Whitbeck et al.).

Children in families experiencing economic pressure had more difficulty adjusting to developmental changes in their lives (Conger et al., 1992; 1993; 2002; Robila & Krishnakumar, 2006). They responded with more negative internalizing and externalizing behaviors (Barrera et al., 2002; Conger et al., 1994), greater anxiety and depression (Lempers & Clark-Lempers, 1990; Wadsworth & Compass, 2002), less self

esteem (Mayhew & Lempers, 1998; Whitbeck et al., 1991), less self-efficacy (Whitbeck et al., 1997) more aggression (Skinner et al., 1992), poorer academic performance (Brody et al., 1994; Gutman & Eccles, 1999) and more substance abuse and deviant behavior with peers (Conger et al., 1991) than children in families with less economic pressure. The pervasive negative effects that economic pressure exerted on all individuals in a family system provided the rationale for continuing to investigate economic pressure and to understand its etiology (Conger & Donnellan, 2007).

### **Background**

To properly investigate the transition to adulthood, it was important to address conditions in childhood that affected paths through life. Gender played an essential role, and often interacted with other background characteristics such as ethnic/racial minority status, family structure, and socioeconomic status. In the transition to adulthood it was important to consider both the parents' socioeconomic status and the development of socioeconomic status of the young person, particularly with regard to academic achievement. Background had pervasive effects on differences in life paths including the timing and ordering of normative events.

### **Gender**

Buck and Scott (1993) found that gender influenced the timing and reasons that young people left home. Women left home earlier than men, especially when they left to marry. More recent cohorts of young people left home at a later age, a trend that was especially true for men. Family conditions, such as single parent families and household density increased the likelihood of leaving home at an earlier age. When the parent who

was the head of the household had a college education, daughters were more likely to remain in the home longer (Buck & Scott, 1993).

Another study showed that early family formation, defined as marriage or parenthood, was more common among females than males (Glick, Ruf, White, & Goldscheider, 2006). Woodward, Fergusson, and Horwood (2006) reported that women were three times as likely as men to become parents by age 25. Apparently, women partnered more frequently with older men, and men's early parenthood may have been underreported. The effects were also moderated by enrollment in college. Forty-five percent of women who were not enrolled in school were married or parents three years after high school, whereas only twenty-five percent of men who were not enrolled in school were married or parents three years after high school. However, rates of family formation were 10% or less for males and females who were enrolled in college. Beyond school, males moved more quickly than females into jobs they considered careers (Mortimer, Vuolo, Staff, Wakefield, & Xie, 2008).

Sneed et al. (2006) investigated financial instrumentality for males and females across a 10-year period of time in early adulthood. Instrumentality referred to actions such as setting goals, making concrete plans, preparing for the future and the young person's intentions related to the participants financial lives. Males and females increased their financial instrumentality from age 17-27, although throughout this period, males had higher levels of instrumentality than females at each point in time. Lee and Mortimer (2009) found that males were more likely than females to be financially independent of parents at age 23.

## **Ethnicity/Race**

Considerable evidence showed that the White U.S. majority experienced less economic pressure than minority groups (Kahn & Pearlin, 2006; Mirowsky & Ross, 1999b; Ross & Huber, 1985), likely due to differences in levels of material resources. Elder et al. (1995) report that among low-income families, African-Americans made significantly more economic adjustments, but there were no differences between African-Americans and the White majority on felt constraints (both were indicators of economic pressure). Mechanisms that have been found to explain minority disadvantage include less intergenerational wealth transfer, racism and discrimination, stigma from a lower-class status, and less adaptive social and cultural capital (Hardaway & McLoyd, 2009).

Research on economic pressure among other minority groups in the United States was rare in comparison to the investigations of African Americans and the White, non-Hispanic majority. However, one study showed that levels of economic pressure and its negative consequences in family life were similar for Hispanics and African Americans (Mistry, Vandewater, Huston, & McLoyd, 2002). Financial stress processes negatively impacted the health and well being of Mexican-origin Hispanics living in the U.S. (Angel, Frisco, Angel, & Chirboga, 2003). Likewise, a study by Kwon et al., (2003) examined the family stress model with Korean families, whereas another study (Mistry, Tan, Benner, & Kim, 2009) applied the family stress model to Chinese-American youth. These studies, like other studies of economic pressure using samples of Asians and Hispanics, have made comparisons within ethnic and racial groups, but there have been few studies comparing them to the White non-Hispanic majority in the United States.

## **Family Structure**

The influence of family structure on the development of financial self-reliance has not been well investigated. Yet, there was some evidence that young people from divorced families became independent at earlier ages compared to those from intact families. For instance, stepfamilies promoted home leaving at an early age (Mitchell, Wister, & Bruch, 1989; Tang, 1997). Aquilino (1991) speculated that youth from disrupted families left home earlier due to increased parent-child conflict, because factors influencing their identity caused them to “grow up faster”, or because noncustodial parents rescinded child support as soon as they were legally able to do so. Children from divorced families expected to receive less financial support from parents than children from two-parent families (Goldscheider, Thornton, & Yang, 2001). In the YDS, however, Lee and Mortimer found no association between family structure and the attainment of economic independence (2009).

Limited evidence points to the influence of family structure on economic pressure. Nevertheless, on the basis of related indicators, there were reasons to suspect that family disruptions were associated with more challenging economic conditions. For instance, academic achievement and high school graduation rates were lower in single-parent families than in two-parent families (Hampden-Thompson, 2009; Strohschein, Roos, & Brownell, 2009). McLanahan and Percheski (2008) argued that single parent families helped to reproduce class, race, and gender economic inequalities across generations. Although income inequality is not synonymous with economic pressure, low

levels of income, and few assets have been positively associated with economic pressure in numerous studies (Conger et al., 2000; Dew, 2007).

### **Socioeconomic Status and Academic Achievement**

Research showed that parental SES reduced the probability that children became financially independent prior to age 19 but afterwards increased the probability of financial independence (Whittington & Peters, 1996). Socioeconomic status was also associated with lower levels of economic pressure (Ross & Huber, 1985). Young people in high socioeconomic families tended to remain residentially and financially dependent longer than low socioeconomic families while they were pursuing post-secondary education, but soon after they begin working full-time they tended to rapidly break away from financial dependency (Goldscheider & Goldscheider, 1994). Young people from lower-class families were less able to rely on parental financial support while they were developing the human capital they need to be successful in gainful employment (Eggebeen & Hogan, 1990; Rossi & Rossi, 1990; White, 1992). High levels of education have been shown to decrease economic pressure directly and also indirectly by increasing income (Ross & Huber). Decades of research have shown that these more objective outcomes were strongly associated with subjective evaluations of economic pressure (Conger & Donnellan, 2007; Conger et al., 2000).

### **Engagement in Adult Roles**

Some of the transitions that occurred in early adulthood may have been motivated by normative desires to become economically individuated from the family of origin and financially self-reliant. Transitions such as leaving home, becoming financially

independent of parents, gaining a post-secondary education, and beginning career work were often motivated and constrained by financial realities. However, positive adaptation and successful timing may have produced financial opportunities and helped to avoid financial opportunity costs.

### **Leaving Home**

Leaving home was a negotiated process between parents and children, and parents' opinions mattered more than the norms of society and peers (Billari & Liefbroer, 2007). Most first-time home leaving took place between ages 18 and 21 (Goldscheider, Thornton, & Young-DeMarco, 1993). Some studies showed that leaving home at a later age was more common in later cohorts, and particularly so for men (Buck & Scott, 1993; Koc, 2007). Despite a rather detailed literature on leaving home, there was little direct evidence demonstrating how the structure of this transition was related to financial circumstances in adulthood. Much of the literature examined the risks associated with leaving home at a young age, but as Galambos and Krahn (2008) showed, living with parents when older was also related to negative outcomes.

The first important issue regarding leaving home was a set of findings suggesting that individuals from disadvantaged families were likely to leave at younger ages. A number of studies found that leaving home early was positively associated with poorer family-of-origin circumstances. Conditions in childhood that were financial risks, such as moving residences; having low parent education; receiving welfare; experiencing parental divorce; and having many siblings hastened the time when a young person moved away from home (Hill, Yeung, & Duncan, 1996). Children left home earlier if

they came from a single parent or stepparent household (Cooney & Mortimer, 1999; Tang, 1997). Higher SES families had more resources available to continue providing residential supports to their children. Furthermore, children from higher SES families were more likely to leave home to attend college (Mulder & Clark, 2001) and to postpone marriage—conditions more compatible with living at home (Goldscheider & DeVanzo, 1989).

Disadvantage in the family of origin was also reflected in the lives of the young people who left home at an early age. Emerging adults who left home earlier in life were more likely to have a history of using public assistance, especially for females (De Marco & Berzin, 2008). Having a child greatly (except at some very early ages) accelerated the process of leaving home (Cooney & Mortimer, 1999). Remaining at home could have indicated that the young person did not have good career prospects (Whittington & Peters, 1996) or had not been successful in school or romantic relationships.

A second issue of importance is the reason a person has for leaving home, conditions that could influence later economic pressure. Leaving home to attend school led to higher levels of academic achievement than leaving to marry or cohabit (White & Lacy, 1997). A history of public assistance in the family and low education were associated with exits to marriage and cohabitation or residential independence rather than school (DeMarco & Berzin, 2008).

A large share of young people returned home to live with their parents for a period of time and most frequently it was upon completion of a college program (Goldscheider et al., 1993; Sessler et al., 2008). Mulder and Clark (2002) found evidence

for the ‘feathered nest’ hypothesis that parent income was positively associated with the likelihood of returning to live at home. A return to living at home indicated difficulty living on one’s own, or disengagement from school (White & Lacy, 1997). Difficulties in becoming financially independent accompanied a return to living at home with parents (Goldscheider & Goldscheider, 1994; Mulder & Clark). Others suggested that economic constraints were the primary reason for returning to live at home (Sassler et al., 2008).

### **School-to-Work Transitions**

For emerging adults, post-secondary education was the cornerstone of socioeconomic advancement. Sobering declines in real wages for young people across the past several decades (Berlin, 2008) meant that youth must have earned more advanced degrees, and pursued better quality jobs to maintain the same standards of living obtained by previous generations. Educational pursuits in early adulthood were viewed as a major reason that young people in these cohorts delayed marriage and parenthood compared to older cohorts (Arnett, 2004; Glick et al., 2006; Johnson et al., 2001). Although education, along with income, and occupational prestige were central components of socioeconomic status, it was not clear how the structuring of an educational career impacted economic pressure in the earliest part of adulthood. Although higher levels of education increased chances for high paying work, these educational levels were also often accompanied by high levels of student debt, especially for students whose parents could not contribute money for children’s education (Christie et al., 2001). The effects of large student debt loads were likely to be most apparent in early adulthood upon completing school, after which increasing wages lessened the economic burden. Thus, educational attainment

could have had a variable effect on economic pressure, with greater declines over time with higher levels of education.

Due to the high costs of education and yet its importance for generating income later in life, it seems that the most advantageous route through the educational process would have been early, uninterrupted enrollment, and timely degree completion. Bozik and DeLuca (2005) investigated the effects of the amount of time transpiring between high school and post-secondary enrollment. They found that those entering school late were comparatively less prepared for academic work. They were more likely to have become a spouse or parent before entering college, and these conditions made it more difficult to finish a degree. The timing of the latest exit from school might have had important effects on economic pressure.

It was important to distinguish “career work” from other types of employment for emerging adults for a number of reasons. First, the nature of on-the-job training changed over past decades. In the 1950s, it was much easier to enter a corporation via an entry-level position and through loyalty to the company, “work up” through the ranks of an organization. With this route of career development, it was possible to have a career that provided a living family wage and furnished retirement with little more than a high school education (for a classic illustration, see Whyte, 1956). In that way, it mattered less whether one’s present employment consisted of career characteristics because there was greater potential for most jobs to be developed into a career, and a larger portion of employed persons were likely to hold long-term commitments to all types of jobs. Contemporary jobs could be classified into those providing benefits, including retirement

options and health insurance, and a living wage and those that do not. Working up to the more remunerative positions was less common in more recent times than direct entry into them through a higher level of education.

A second reason to consider when a person entered a “career,” according to their own view, was that many young people took jobs with the expectation they would be temporary, as they worked their way toward an educational degree. This was a common practice according to interviews Arnett (2004) conducted with emerging adults. For instance, some indicated they would not want to keep a waitressing job for the remainder of their work lives.

Finally, some studies suggested that, when employed persons viewed their jobs as “careers,” they invested more heavily in their work and were more dedicated to good work performance (Huiras, Uggen, & McMorris, 2000; Mortimer et al., 2008). This greater investment meant they would be more competitive and seek opportunities to excel at work. Schulenberg and colleagues (2004) studied changes in socio-psychological well-being across early adulthood and identified success at work as the most salient contributing factor among seven different developmental domains. Caspi, Bem, and Elder (1989) showed that a later age of entry into a stable career corresponded with less occupational achievement and less occupational stability for men. Thus, earlier career engagement corresponded with less economic pressure in early adulthood. However, very early career timing also signaled a commitment to work prior to an adequate post-secondary education.

A recent, comprehensive study of career timing found evidence for two “tracks” to a career; one included a focus on postsecondary education and minimal work engagement until graduation and a second was characterized by an early focus on work in high school and comparatively early entry into career work (Mortimer et al., 2008). It was unclear which pathway might have best predicted early adult economic pressures. In the first scenario, lengthy education could initially have meant less progress in developing income (Staff, 2007) and accumulation of debt that would be hard to manage in the early years of adulthood. In the second scenario, there would have been ample time to develop one’s career, but without extensive education, the jobs considered careers could have provided less income and less accumulation of assets over time.

### **Family Transitions**

*Marriage.* Marriage was expected to be related to greater economic pressure in early adulthood. First, marriage was frequently postponed by young people until soon after other socioeconomic transitions took place (Guzzo, 2006). Plotnick (2007) found that high school seniors who planned for a college degree expected to marry later than their peers who did not expect to go to college. Many young people did not marry until they completed school (Oppenheimer, Kalmijn, & Lim, 1997). In these instances, later marriage was a marker of greater educational attainment. Education also played a role in findings indicating that children from families of lower socioeconomic status married at earlier ages (South, 2001).

Families of higher socioeconomic status were influential in the delay of marriage for their children for a number of reasons. First, wealthier parents used financial

resources to steer their children away from marriage at an early age (Axinn & Thornton, 1992) by providing a more comfortable home environment, and a standard of living that was difficult for children still acquiring the level of human capital needed to secure a similar lifestyle to obtain (Avery, Goldscheider, & Speare, 1992; South, 2001). High SES parents instilled higher educational expectations in their children and the idea that marriage was incompatible with simultaneous pursuit of a degree (Raty, Leinonen, & Snellman, 2002; Thornton, Axinn, & Teachman, 1995).

*Parenthood.* During the 1990s, the timing of first birth coincided with educational attainment resulting in a bimodal distribution. The first peak in the distribution pertained to women with a high school degree or less whose highest rates of first births occurred at age 21. The second peak in the birth rate occurred at about age 30, for women who obtained a bachelor's degree or higher education (Sullivan, 2005). These trends underscored the possibility that birth timing was a proxy for socioeconomic attainments.

Parenthood was one of the most anticipated roles in life. Parenthood was also associated with high levels of fear (Hooker et al., 1996). In addition to fears about their performance as parents, many mothers and fathers feared an inability to provide for the needs of their children (Hooker et al). Women thought more than men about their future as a parent (Morfei, Hooker, Fiese, & Cordeiro, 2001; Segal et al., 2001). Individuals who became parents at younger ages came from families with less family income and assets, and had mothers with less education and more divorce and remarriage (Barber, 2001). These conditions in the family of origin made it more challenging to contribute to

the development of human and social capital in offspring and diminished the likelihood of financial support to adult children facing tough economic circumstances.

Early parenthood was associated with reduced chances that a young person would develop sufficient human capital and was associated with lower incomes (Klepinger, Lundberg, & Plotnick, 1998). Young mothers in particular were likely to experience poverty (Seccombe, 2000).

### **Life Paths**

From the previous discussion it was clear that adulthood transitions were not isolated events. The context for decision making and opportunities for the future depended on a constellation of acquired roles. Role statuses varied with regard to ease of entry and exit, how much they were desired, and how much they facilitated or demand occupancy of other role statuses. Thus, it was critical to examine adulthood roles in the context of other roles. This has been done in a number of different ways. If one took into consideration a number of different roles, as well as their ordering and timing, the mathematical potential for the number of paths through life quickly became large. Yet, common goals and expectations, institutional influences, and historical circumstances made the existence of many pathways implausible.

Life course researchers who examined transitions to adulthood used a number of strategies to account for the interrelated contingencies that exist among role statuses, how they were anticipated, and how they were entered into and exited. For instance, Schulenberg et al. (2004) provided a table with seven domains, including education, work, financial autonomy, romantic involvement, peer involvement, substance abuse

avoidance, and citizenship, and designed criteria that indicated whether a participant was succeeding, maintaining, or stalling in their progress toward adulthood. These criteria were then related to global well-being. Well-being, which was measured as a combination of self-esteem, self-efficacy, and social support, was higher for those succeeding in the seven domains, and was most notably associated with work and citizenship. Cohen et al. (2003) collected narratives based on specific questions about six life domains, including residence, finance, school, employment, romance and parenting. Raters of these narratives recorded a score from zero up to 100 reflecting each participant's level of independence and responsibility in each domain—what they referred to as a *transition level*. These transition levels were linked to background characteristics and to each other. In another approach, Eliason et al. (2009) used a multilevel latent class procedure to identify configurations of roles and life paths that described how these role configurations changed over time. These latent life paths were related to participants' expectations about the timing of roles.

The primary purpose of these techniques was to contextualize transitions to adulthood so they captured more meaning, whether in terms of psychosocial adaptation or within the context of other simultaneous roles. These studies were person-centered rather than variable-centered approaches to the life course (Magnusson, 2003). These studies demonstrated the importance of attending to changing adult roles in the context of each other.

## Conceptual Frameworks

### Life Course Perspective

The life course perspective or paradigm was based upon a number of theoretical principles that served as a guide for longitudinal research (Elder, 1998a; 1998b; Elder, Johnson, & Crosnoe, 2004). What distinguished the life course from other lifelong perspectives, such as the life cycle or the life-span, was the fundamental proposition that each age cohort would forge a somewhat unique set of paths through life, indexed by the historical period in which they were born (Elder, 1998b).

*Lifelong development.* Because the life course perspective is about longitudinal processes, it is inherently developmental. Yet, the life course perspective is distinctive because it emphasizes that development is a lifelong process. Many developmental theories are limited to what are described as developmental stages or developmental periods. In fact, in the human sciences, entire disciplines have built up around the study of individuals at certain age periods such as infant and child development, adolescence, and gerontology. In contrast, life course principles are expected to apply across all stages of development. As Elder states, “the important issue here is to recognize there is not one ‘optimum’ point of entry for studying human development across the life span” (1998a, p. 941). This approach also means that the life course perspective is particularly well suited to research that makes connections between life stages.

The principle of lifelong development can broaden the scope of early adulthood research by prompting researchers to link this period of development to other periods of development, such as childhood, adolescence, and adulthood. Still, the number of studies

that link the timing and content of developmental transitions, post adolescence, to later developmental periods in the life course is relatively small. This reflects a broader deficit in many developmental studies because they fail to draw connections between life course developmental periods. A life course perspective leaves open the possibility for making connections between periods by assuming that “human development and aging are lifelong processes” (Elder et al., 2004, p.11). It provides a rationale for linking childhood background to life paths and to conditions in early adulthood.

***Cohorts.*** In life course research, principle of time and place provides impetus for attending to the uniqueness of an individual cohort and studying a particular cohort over time. This principle states that “the life course of individuals is embedded and shaped by the historical times and places they experience over their lifetime” (Elder et al., 2004, p. 12). Most studies investigating age effects on economic pressure were based on cross-sectional designs that could not determine whether age differences were the result of changes as individuals aged or whether they reflected stable differences between cohorts. Studies using a panel design, with single or multiple birth cohorts provided greater leverage in evaluating the effects of age on economic pressure.

***Transition timing.*** The principle of life timing states that “the developmental antecedents and consequences of life transitions, events, and behavioral patterns vary according to their timing in a person’s life” (Elder et al., 2004, p.12). Stated another way, this principle suggests that the meaning or impact that an event will have in the life of the individual is based on the age at which it occurs. This is true for individual transitions as well as historical events. Moreover, shifts in aggregate transition timing affect individuals

in ways that may alter the very meaning of life course stages. The phenomena of contemporary “emerging adulthood” largely occur because of the later timing of family formation including marriage and parenthood. Thus, life timing has, in important ways, given rise to the social conditions that comprise the advent of emerging adult life patterns. Similarly, life timing could have an impact on economic conditions of early adulthood and impact the pressure felt by young adults.

The timing of major life transitions are, of course, not independent of one another. Transitions often mark the initiation or culmination of integrated developmental processes (Hareven, 1994). For example, marriage may be the culmination of mate selection, and finishing school may be the culmination of obtaining a degree.

The transition to adulthood is believed to be an especially consequential period of the life course, the time when individuals “come of age” or experience an expansion of the “formative years.” This is likely to be especially true with regard to economic circumstances. The normative tasks of building human capital, and becoming financially self-reliant, intersect with developing attitudes about the financial world and one’s place in it as young people are taking stock of their own resources and opportunities. Individual and family-related economic setbacks may have far-reaching psychological as well as objective consequences. As Alwin and McCammon (2003) note, these are impressionable years and each passing cohort is limited in their ability to find success in the same ways that preceding cohorts have because they encounter new realities in the midst of social change (see Mannheim, 1952).

## **Emerging Adulthood Perspective**

The literature on emerging adulthood offered a descriptive view of the nature of the life course from the late teens through the 20s for contemporary young people. Arnett (2000a) coined the term “emerging adulthood” to define the developmental period between adolescence and adulthood for contemporary young people. Although the proponents of this perspective downplayed the psychological centrality of demographic markers of the life course, including such events as leaving home, completing a degree, achieving financial independence from parents, beginning career work, and family formation, much research documented the importance of these transitions. Demographically, the period of time elapsing between the initiation and major completion of these markers has expanded to roughly a decade or more, whereas for older cohorts, these transitions tended to be more compact, orderly, sequential, and somewhat permanent (Furstenberg et al., 2004; Settersten, 2008; Shanahan, 2000).

The emerging adulthood literature made several points of importance for the present study. The emerging adulthood perspective documented variability in life paths. Emerging adults and their parents could no longer rely on unified societal expectations about the paths their lives should take. Greater opportunity for diverging paths placed the burden of skillful adaptation on individuals and their families, instead of larger societal institutions. Certainly, this was a burden of opportunity, but greater diversity also meant that it was more difficult to identify those who were headed for difficulty in early adulthood. Emerging adulthood focused attention on matters of transition timing, ordering, and permanence in the life course. The findings of emerging adulthood naturally led to the

need to discriminate those characteristics that matter for later adult outcomes from other harmless idiosyncrasies in the structuring of the life course (Arnett, 2007b).

Emerging adult research revealed that financial and economic matters were central life concerns for young people. Being financially independent from parents was one of three criteria that emerging adults listed as necessary for being identified an adult (Arnett, 2001). Emerging adults set record levels of post-secondary enrollment, which enhanced career development for both men and women in dual worker families.

Anecdotal evidence suggested that many single individuals and cohabiting couples were postponing marriage and parenthood until they could “afford it”. Interesting questions surfaced about the role of emerging adult cognition in life course change. The degree to which anticipated economic pressure in adulthood structured life paths and the time that emerging adults were willing to spend in educational pursuits was unknown. If cohorts of young people believed that more education and later marriage and parenthood resulted in less economic pressure thereafter, it is possible that a preoccupation with financial matters, in part, contributed to changes in the life course.

Arnett predicted that the characteristics of emerging adulthood would continue to be a part of the life course for future generations (2004). Thus it was important to understand how this unique life course period affected adult development, not only for past cohorts of emerging adults, but for future cohorts. The first decade of emerging adulthood literature sought to make the case for this as a new and distinct period of the life course, brought on by changing economic and social times. This stage of life was marked by uncertainties for young people, with much searching, testing, and

experimenting before settling into adult roles. This was especially so for the middle-to-upper classes to whom the emerging adulthood perspective best applied (Côte & Bynner, 2008). Research on emerging adulthood patterns could affect policy change, institutional practice, and family life education.

Finally, emerging adulthood literature suggested that conditions in emerging adulthood resulted in greater individual agency or greater freedom to self-determine the direction of one's own development. Arnett (2007a) referred to emerging adulthood as "the self-focused age" because it was the "time in life that is the least subject to institutional control" (p. 155). Most emerging adults became more or less independent of their families of origin but had not yet adopted new family responsibilities that are part of partnership and parenthood. The newness of this long period of "freedom" in emerging adulthood, however, came with the irony that many young people seemed to have unclear views of the best way forward (Arnett, 2004). In sum, this research suggested there was potentially great adaptive capacity within individuals, although emerging adults were often uncertain about what were the best adaptations.

### **Study Rationale**

A number of important points from this review of literature were reiterated here to serve as a rationale for the present study. First, with no extant studies focusing on how transitions to adulthood impacted economic outcomes in early adulthood, there was a clear gap in this area of research. Economic pressure was probably the more important outcome in this investigation due to the social and emotional difficulties it causes in family life. Economic pressure in the family-of-origin interferes with adolescent

development and the acquisition of human capital. These disruptions could lead to economic pressure in the family-of-destination in early adulthood. However, financial self-reliance was an important companion outcome, for its delay could speak to the difficulties of coming of age, in general, and particularly during a period of declining economic opportunities for young people.

The novel approach in this study of using life course paths as predictors of financial outcomes was expected to contribute meaningfully to the dialogue between researchers with “emerging adulthood” views of early adulthood and those who focused on demographic transitions to adulthood. Arnett’s (2004, 2007b) picture of emerging adulthood highlighted the freedoms in early adulthood that were necessary for individuals to break from a childhood past and work toward a new beginning. If this view is correct, the influence of background may have minimal effects on the life paths that individuals select in the transition to adulthood. Likewise, variations in life paths could be of minor consequence for adult economic experience. On the other hand, childhood background could constrain selection into life paths, and life paths could prove to be consequential markers of adult economic experience. Such patterns would support the continuing significance of transitions to adulthood.

### **Chapter III: Methods**

This chapter describes the source of data and how the sample was selected. This is followed by details about the measures, how analyses will be used to answer research questions, permission to obtain the data and statistical programs used, how missing data were handled, and notes on the statistical power of the study.

#### **Data**

Data for this study came from the Youth Development Study (YDS). The YDS started by surveying high school students who were chosen at random from St. Paul, Minnesota public schools. The study began in 1988 with 1010 consenting 9<sup>th</sup> graders and 1000 participating in the first year. Most participants were born in 1973-1974 and were ages 14-15 when the study began (hereafter the earlier age in this two-year span will be reported). In 2010, they were in their mid-thirties, thus, they represent a single birth cohort which has passed into adulthood. Surveys were administered near annually from 1988 to 2005, except in 1996 due to lack of funding and in 2001 when the funding cycle included a recess in data collection. The average retention rate from 1988-2005 was 81%, with the single lowest observed annual retention rate of 71% occurring in 2003. In many cases, individuals who were lost due to attrition in one year were successfully reinstated in later years. The study is currently ongoing, as it has been, for more than two decades.

Self-administered surveys contained detailed questions about the structure of the life course, including major transitions, and a continuous month-to-month life history calendar. Other portions of the survey asked questions about childhood family structure,

socioeconomic status, economic socialization, education, employment, and family formation. The data have been used extensively to study school-to-work transitions and a range of other familial and socioeconomic developments from a life course perspective (Mortimer, 2003). The content and wording of the questionnaires have been carefully tailored to the developmental phase of the participants with appropriate changes being introduced over time.

Mortimer (2003) has written a book outlining the demographic characteristics and early work experience of YDS participants. The YDS was representative of the St. Paul 9<sup>th</sup> grade population on most demographic factors; 57.3% of sample participants were female, 76.9% White, 7.3% Black, and 4.2% Hispanic. Due to the accumulated ethnic and racial demographic changes in the St. Paul community, the sample is less representative today than it was when the study began. However, Mortimer noted that the sample contained a full-spectrum of socioeconomically advantaged and disadvantaged youth.

### **Sample**

Two goals guided sample selection in this study. The first goal was to be as inclusive as possible, and the second was to legitimately handle missing data. Because this study relied on repeated measures for the dependent variables, respondents were excluded from the study if they did not provide at least two repeated measures of financial self-reliance or economic pressure. If a respondent left the study in one year, he or she had opportunities to return to the study in later waves of data collection.

Appendix A shows there were 859 respondents with at least two measures of financial self-reliance and 811 with at least two measures of economic pressure. These larger samples were used to estimate baseline models of change in financial self-reliance and economic pressure. However, with the inclusion of predictor variables in subsequent models, the final sample was reduced to 732 for financial self-reliance and economic pressure. This number included all participants who Eliason et al. (2009) were able to classify into a meaningful life path—and life pathways were a key set of predictors in this study. Similarities between baseline models (respectively using samples sizes of 859 and 811) and subsequent models with predictors (using the final sample of 732) lent confidence in this approach. Furthermore, virtually all discussion of the findings, except for a brief mention of the baseline models, was based on the sample of 732 individuals, in the final sample. This resulted in baseline estimates that were representative of the entire YDS sample, while the final sample was representative of those who provided sufficient data to estimate a life pathway.

*Demographic characteristics.* Table 1 contains the means and standard deviations of background variables and the repeated measures of financial self-reliance and economic pressure for YDS participants assigned to each life path. Females comprised 58% of the sample. Twenty-one percent of the respondents indicated they were part of a racial minority group. This was reflective of the population at the time of the initial sampling (Mortimer, 2003). At age 14, a majority of the participants, 58%, were living in an intact two-parent family, 23% were living with a single parent, 14% were living with a stepparent, and 5% were living in some other type of family structure.

Table 1. Description of Study Variables for YDS Participants

Variable	Life Paths					Total (N=732)
	Early parent, unmarried, minimal work (n=149)	Early parent, married, full-time worker (n=112)	School-to-work, negligible family formation (n=199)	School-to-work, delayed family formation (n=148)	School-to-work, on-time family formation (n=124)	
<i>Background</i>						
Percentage female	69	62	49	50	65	58
Percentage ethnic/racial minority	33	25	16	18	16	21
Family structure (ages 14-15)						
Intact two-parent family (%)	46	54	62	65	62	58
Stepparent (%)	18	15	11	10	15	14
Single parent (%)	27	28	22	20	18	23
Other arrangement (%)	9	3	5	5	5	5
Parental SES (ages 14-15)						
Level of income	5.08(2.01)	5.14(2.17)	6.37(2.36)	6.55(2.35)	6.33(2.09)	5.97(2.30)
Level of education	2.83(1.38)	3.09(1.46)	3.91(2.02)	4.13(2.12)	3.68(1.82)	3.58(1.88)
Grade point average (ages 17-18)	2.53(.69)	2.67(.66)	2.88(.84)	3.02(.72)	2.98(.71)	2.84(.76)
<i>Repeated Measures</i>						
Financial self-reliance						
Age 23	64.78(39.62)	80.54(34.00)	72.48(32.09)	79.65(28.82)	84.82(28.36)	75.84(33.33)
Age 24	76.21(35.04)	90.92(21.37)	82.26(28.56)	92.84(15.78)	94.37(17.47)	86.80(25.91)
Age 25	81.98(30.14)	96.34(15.48)	87.14(25.90)	94.64(14.05)	98.44(5.28)	91.07(21.79)
Age 26	83.87(26.53)	94.62(16.80)	82.92(30.60)	95.57(12.83)	98.89(5.49)	90.28(22.78)
Age 27	--	--	--	--	--	--
Age 28	82.78(30.75)	95.43(14.74)	83.51(30.83)	96.90(11.66)	95.35(13.84)	89.74(24.32)
Age 29	81.97(30.76)	93.37(19.81)	85.91(28.82)	95.09(14.75)	96.34(13.35)	90.00(23.98)
Age 30	79.10(32.32)	91.85(20.59)	88.90(25.10)	97.03(10.61)	95.06(16.88)	90.07(23.56)
Age 31	83.21(30.71)	93.32(17.62)	86.91(27.45)	96.92(12.14)	96.86(11.35)	90.89(22.83)
Economic pressure						
Age 25	12.69(4.96)	12.07(4.67)	10.83(5.10)	9.83(4.48)	10.50(4.43)	11.11(4.87)
Age 26	12.77(4.57)	12.23(5.16)	10.40(4.65)	9.70(4.62)	10.42(4.30)	10.98(4.77)
Age 27	--	--	--	--	--	--
Age 28	13.43(4.80)	12.75(5.36)	11.14(5.24)	10.42(4.68)	11.19(4.81)	11.70(5.11)
Age 29	13.22(5.07)	12.22(5.57)	10.72(5.13)	9.67(4.81)	10.96(4.64)	11.27(5.17)
Age 30	--	--	--	--	--	--
Age 31	12.84(4.93)	12.28(4.86)	10.82(5.11)	9.94(4.57)	11.52(5.05)	11.37(5.02)

Incomes categories ranged from 1-13, education categories ranged from 1-8. Hyphens (--) indicate waves when no data were collected. Standard deviations are in parentheses.

Parents' average level of income was 5.97 on a 13-point scale, a score which was roughly equivalent to \$30,000 in 1987, and presently equivalent to about \$56,000 when adjusted for historical levels of inflation. On average, the parent with the highest level of education in each family scored 3.58 on an eight-point scale, indicating that they closely averaged obtaining an associate's degree. The mean grade point average (GPA) for participants at age 17 was 2.84, or closest to a B grade.

The mean percentage of financial self-reliance at age 23 was 76% for the total sample (meaning that on average three-fourths of participants' living expenses were covered through their own financial means), with increases up to 91% for the sample by age 31. The average level of economic pressure at age 25 was 11.11 with minor fluctuations up to age 31 when the average level was 11.37. Financial self-reliance was measured as a percentage from 0-100. Economic pressure was measured on a scale from 3-21.

## **Measures**

Table 2 contains the names and a description of the coding of variables used in this study. The data and codebooks were obtained from the principal investigator of the Youth Development Study.

***Financial self-reliance.*** From ages 23-31, the finance section of YDS surveys contained a question asking respondents, "During the past year, what share of your household living expenses were covered by each of the following sources?" A list with blank spaces next to each potential source of financial support followed the question.

Table 2. Variable Names and Coding.

Variable	Dataset Name	Description
Gender	gender	Male=0, Female=1
	gendern	Male=-1, Female=1 (used to facilitate graphing)
Ethnic/racial minority status	Minority	White, non-Hispanic=0; All others=1
Family structure	parcnfg <sup>a</sup>	Grouping variable used to create a set of binary variables:
	twoparent	Intact two-parent family=0
	stepparent	Stepparents=1; All others=0
	singleparent	Single parent=1; All others=0
	otherparent	Other arrangements=1; All others=0
Parental SES	faminc1 <sup>a</sup>	Family income=1 to 13 (W01, 1988)
	paeduw1 <sup>a</sup>	Parent education=1 to 8 (most educated parent, W01, 1988)
Academic achievement	hsgpa	High school GPA=0.0 to 4.0 (F to A, W04, 1991)
Life path	modallp <sup>a</sup> :	Latent life path schemas:
	lpnopartner	Early parent, no partner, minimal work=1; All others=0
	lppartner	Early parent, partner, full-time worker=1; All others=0
	lpnegfam	Traditional school-to-work transition, negligible family formation=1; All others=0
	lpdelayfam	Traditional school-to-work transition, delayed family formation=1; All others=0
	lptimefam	Traditional school-to-work transition, on-time family formation=1; All others=0
Financial self-reliance	fsr97	Percent of financial self-reliance=0 to 100 (W09, 1997)
	fsr98	Percent of financial self-reliance=0 to 100 (W10, 1998)
	fsr99	Percent of financial self-reliance=0 to 100 (W11, 1999)
	fsr00	Percent of financial self-reliance=0 to 100 (W12, 2000)
	fsr02	Percent of financial self-reliance=0 to 100 (W13, 2002)
	fsr03	Percent of financial self-reliance=0 to 100 (W14, 2003)
	fsr04	Percent of financial self-reliance=0 to 100 (W15, 2004)
	fsr05	Percent of financial self-reliance=0 to 100 (W16, 2005)
Economic pressure	ep99	Level of economic pressure=3 to 21 (W11, 1999)
	ep00	Level of economic pressure=3 to 21 (W12, 2000)
	ep02	Level of economic pressure=3 to 21 (W13, 2002)
	ep03	Level of economic pressure=3 to 21 (W14, 2003)
	ep05	Level of economic pressure=3 to 21 (W16, 2005)

<sup>a</sup> Original variable names.

Respondents were instructed to list a percentage next to each source and to “make sure it all adds up to 100%.” The list of sources changed somewhat from year to year; for instance, the earlier years listed scholarships and student loans and later years asked about earnings from spouses. A specified “other” category was provided to list sources of support that were not otherwise listed. Regular major categories listed included scholarships and loans, own earnings, support from parents, earnings from spouses, and governmental assistance.

From this list, a tally was made to reflect a percentage of living expenses based on financial self-reliance. Sources included in the tally of financial self-reliance were one’s own earnings, scholarships, loans, and spousal earnings. Scholarships reflected the initiative of the respondent. Loans were included with the assumption they were most likely to be repaid by the respondent. Thus, scholarships and student loans were considered self supports in this study. Due to social and legal conditions in the U.S., it was also assumed that married individuals would express their living expenses in terms of the partnership. Including spousal sources of income in the tally of financial “*self-reliance*” also recognized the value of domestic work for individuals who were partially or fully dependent on an employed spouse’s income. Scores ranged from 0 to 100 percent with higher scores representing greater financial self-reliance. The two most common sources of financial support beyond self and spouse were support from parents and from government assistance. Thus, financial self-reliance was characterized in this study as financial independence from parental support *and* government assistance. This characterization of financial self-reliance best reflects the ideals and beliefs that young

people expressed for their financial future as adults in Arnett's "emerging adulthood" interviews (2004) and also reflects the aims of U.S. policymaking for family economics in the past decade.

Appendix B provides some background information on the percentages of participants who were completely self-reliant at each age and the percentages receiving any support from parents or government. The percentages of those who were totally financially self-reliant were also given within each life path group in Appendix C. At age 23, only 44.7% of respondents were *completely* financially self-reliant (fully self or spouse supported); by age 25 the number had grown to 72.0% and by age 31 76.5% were fully self-reliant. Note that this information was included in the appendices because the information was about *whether* there was any support (see Swartz et al., in review) and not *how much* support; this latter point was the main focus in this study. Appendix B also shows the results of a quality check of the data on financial self-reliance. Respondents were instructed to ensure that they allocated percentages totaling 100% of their daily living expenses among the sources listed, and the portion of respondents who sums totaled the correct number were 98.5% or greater at each occasion of measurement. In the rare remaining cases, non-valid sums in excess of 100 percent were recoded to this amount in the dataset prior to the analyses.

***Economic pressure.*** Repeated measures of economic pressure were the sums of three items used to measure economic pressure in five waves of the study (1999, 2000, 2002, 2003, & 2005) spanning a seven-year timeframe of adulthood when the respondents were between ages 25 and 31 years of age. In 2001, no data were collected

from YDS respondents, and in 2004 a shorter survey was administered that excluded items measuring economic pressure. Because each item's possible response scale ranged from 1-7, the summary score for each year ranged from 3-21, with higher scores representing more economic pressure. Presumably, as a means of reducing social desirability bias, questions were preceded by a stem, stating, "Many young adults experience financial problems." The first question was, "How much stress have you felt in meeting your financial obligations during this past year?" The range of possible responses was from 1 (*not at all stressful*) to 7 (*extremely stressful*). The second question asked, "How difficult is it for you to pay your bills on time? These bills might include insurance, rent, mortgages, car payments, credit cards, etc." The range of possible responses was from 1 (*not at all difficult*) to 7 (*extremely difficult*). The final question asked, "How much burden do you feel from debt (from credit cards, mortgages, personal loans, etc.)?" The range of possible responses was from 1 (*no burden at all*) to 7 (*extremely high burden*).

Appendix D contains descriptive statistics and measurement characteristics of the individual economic pressure items and the summary scores. Individual standard deviations were remarkably consistent throughout all waves. The alpha reliabilities, calculated within each year, ranged from .85 to .90, showing that the items maintained consistency over time. In addition, all items were subjected to confirmatory factor analyses with items loading on latent economic pressure variables that were correlated over time (and with autocorrelated error terms from one year to the next). The fit of this model was acceptable (see fit statistics in Appendix D). The factor loadings ranged from

.73 to .91. Together these findings suggested that items reliably represented the constructs and that the measures worked similarly over time.

Although structural equation modeling procedures allow for modeling growth curves based on latent variable indicators (for an example, see Mirowsky & Ross, 2007a), only summary composite scores were used as indicators in this study. This was done to limit the complexity of the models.

Because the association of the growth curve trajectories of financial self-reliance and economic pressure will later be examined, Pearson correlations between the measures were reported here within each of the five waves that economic pressure was recorded. In 1999, 2000, 2002, 2003, and 2005, the correlations between financial self-reliance and economic pressure were,  $r = (-.06, -.10, -.13, -.17, \& -.14)$  respectively. These correlations were all non-significant,  $p > .05$ .

***Background variables.*** Background variables included measures of gender, ethnic/racial minority status, family structure, parent socioeconomic status, and the respondent's academic achievement. Because these variables were statistically treated as non-time-varying predictors, the ages at which they were measured was selected with care. Each of these variables was measured prior to the initial assessments of financial self-reliance and economic pressure. Note that some of the variables, such as parent socioeconomic status and family structure came from parent surveys, which were limited to waves at age 14 and age 17. Thus, it would have been impossible to use them as time-varying variables when the outcomes were measured.

Gender was measured 0 (*male*) or 1 (*female*) in all descriptive tables and most of the analyses. However there was a need in several instances to use the code -1 (*male*) to facilitate graphing lines halfway in-between estimates for males and females as a means for graphically incorporating a “control” for gender. (When focusing on specific non-gender effects, the codes -1 and 1 for gender may be used because the mathematical average is close to zero and the term can be dropped from the equation.) The instances where this occurred were clearly marked in the appropriate tables. Gender was measured in the first wave when respondents were age 14.

Ethnic/racial minority status was measured 0 (*White, non-Hispanic*) or 1 (*all other racial/ethnic groups*). Although it is generally preferred that all not be compared to a single ethnic group, the numbers for all but the two largest groups were comparatively small and it was not possible to make meaningful comparisons any other way. Thus, this variable was used strictly as a control variable. Ethnic/racial minority status was measured in the first wave when respondents were age 14.

Family structure was measured in the first wave of the study when respondents were age 14. The earliest measurement of family structure was used because the effects of family structure on financial outcomes may persist or accumulate over time (McLanahan & Percheski, 2008). A series of dummy variables, 0 (*no*) and 1 (*yes*) indicated whether the respondent lived a) in an intact two-parent family, b) with a stepparent, c) with a single parent, or d) in some other family arrangement, for instance, with grandparents<sup>2</sup>.

Parent socioeconomic status was measured in the first wave of the study when participants were age 14 as a latent variable with two indicators, parent education and

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<sup>2</sup> The language used to describe family structure categories comes from the YDS survey codebook.

family income. These data were obtained from surveys administered to parents. Family income was measured in a series of intervals with categories ranging from 1 (*under \$5,000*) to 13 (*\$100,000 or more*). Education was measured on a scale from 1 (*less than high school*) to 8 (*PhD or professional degree*); in two parent households, the higher level of either parent's education was used.

Finally, high school academic achievement was measured as the adolescent's GPA. Letter grades were converted to numbers ranging from 0.0 (*F*) to 4.0 (*A*). GPA was measured in the fourth year of high school when the participants were age 17 (the fourth wave of the study).

***Life paths.*** This study builds directly upon previous work by Eliason et al. (2009) by using a life path variable developed from their work. The variable itself was a grouping variable used to divide the sample into five mutually exclusive groups based on similarities in the life course during the transition to adulthood from ages 17-30. A series of dummy variables was used to indicate group membership coded 0 (*no*) and 1 (*yes*).

To fully appreciate the uniqueness of the life path variable and the procedures used to develop it (Mortimer & Shanahan, 2003) it was essential to review part of what was accomplished by Eliason et al. (2009). They began by defining a set of five role statuses that typically change in the transition to adulthood and were particularly consequential for their ordering, timing, and duration effects across the life course. These statuses were 1) stable full-time employment, 2) in school, 3) living at home, 4) parent, and 5) married. In each given year of their study, *stable full-time employment* meant working at least 11 months per year at 35 or more hours per week (Eliason et al. also

considered other work categories that are not portrayed in this study); *in school* meant attending school at least one month of the year irrespective of level; *living at home* meant residing with parents at least one month a year (this included college students who lived at home during summer months); *parent* meant having a child that was born in or before a given year; and *married* meant being married in or before a given year. These variables formed the backbone of a “latent life path probability model” developed by Macmillan and Eliason (2003).

The first step in their analysis was to identify an efficient number of *role configuration schemas*. A role configuration schema was defined as any possible combination of roles statuses at a particular point in time. In any given year role statuses could be combined in a number of ways. For instance, it was possible to be in school *and* employed in stable full-time work, but it was more likely that only one *or* the other would occur. *Latent role configuration schemas* are those likely to be observed in the sample. Using a multilevel latent class procedure (Vermunt, 2003), significant probabilities for five latent role configuration schemas emerged; they were, a traditional student role, stable employed single, working single parent, married working parent, and married working non-parent.

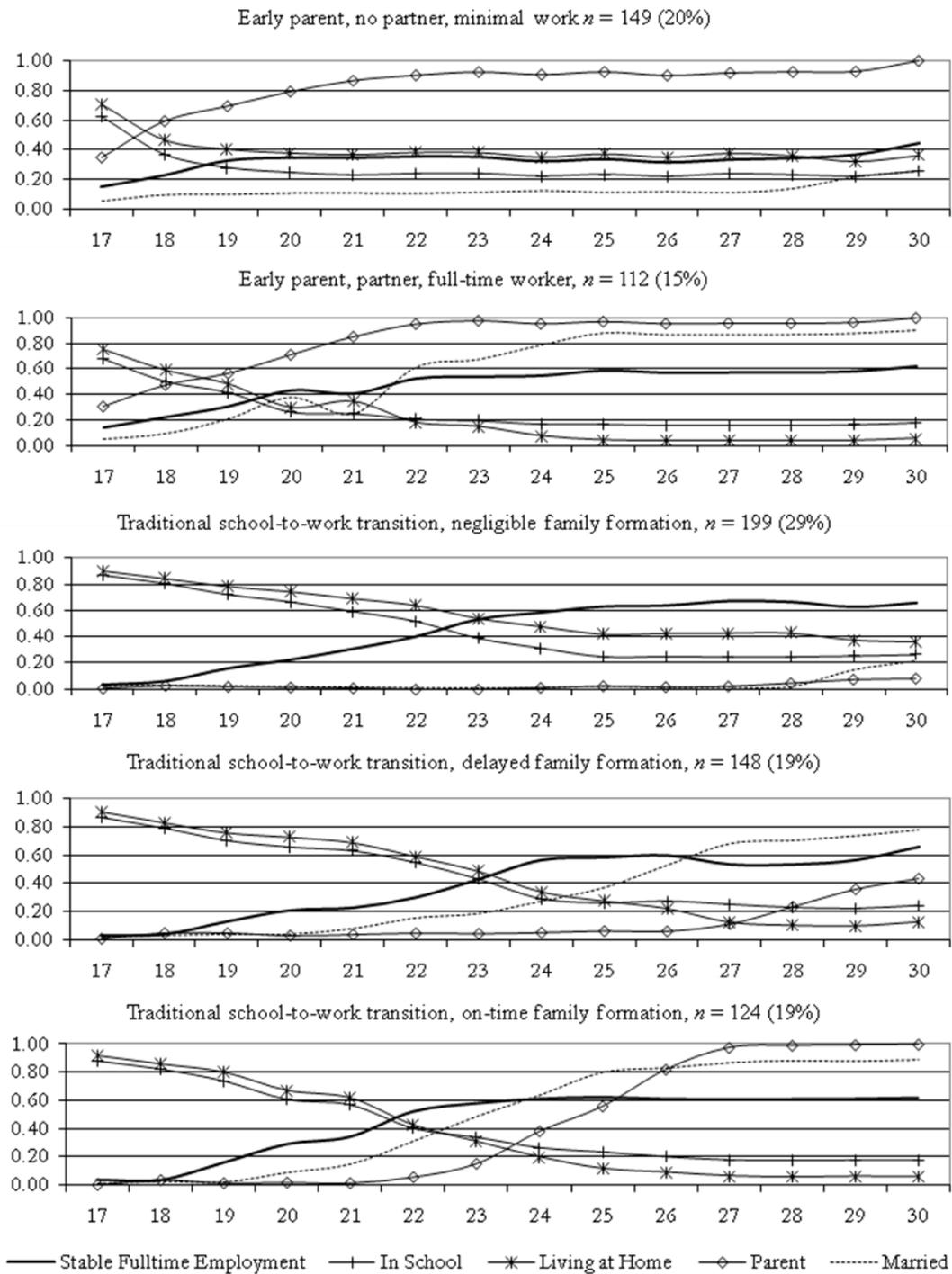
In step two, these role configuration schemas were embedded into *life path schemas*. A life path schema was defined as any potential progression of role configurations over time and a *latent life path schema* was a likely progression of role configurations. For instance, a traditional student role configuration could give way to a number of different role configurations with the passage of time such as married working

parent or married working non-parent. The multilevel procedure generates an efficient number of latent role configurations with high probabilities in each given year embedded within an efficient number of latent life path schemas depicting how these role configurations evolve over time, thus capturing breadth and depth in the data. Figure 2 is a reproduction of the latent life paths discovered by Eliason et al. (2009).

A further step was to examine the coherence between the latent life paths and the participants' actual life courses. The similarities of each participant's actual life course (as evidenced by their role configurations across time) with the unobserved latent life paths were determined by the correspondent probabilities of being represented by each latent life path. To be a convincing model, the participants assigned to each group should have high probabilities of an actual life course that conformed to one of the latent life paths and low probabilities of following all other life pathways. In fact, almost all YDS participants had an exceedingly high probability of having a life course that resembled a single latent life path. The modal assignment was highly accurate, in that approximately 98% of cases had a probability of less than .05 or higher than .95 of being in each latent pathway (M. Vuolo, personal communication, May 25, 2009).

Subsequent to Eliason et al.' study (2009), a constructed variable based on their work was introduced to the YDS dataset which categorically assigned the 732 participants into groups according to the five meaningful "latent life path schemas". In this study, this variable is hereafter referred to as the life path variable, or set of dichotomous life path variables.

Figure 2. Reproduction of YDS Latent Life Paths Discovered by Eliason et al. (2009)<sup>3</sup>



<sup>3</sup> Permission to reproduce this figure was obtained while it was part of an unpublished manuscript.

Because the individuals within each group moved similarly through the transition to adulthood, it was important to highlight the features of the life course that distinguish each group. Although the life paths contain information on residential, educational, and work roles, the timing and occurrence of family formation (marriage and parenthood) was a particularly efficient way to distinguish them by name.

The first life path, including 20% of the sample, was characterized by *the early acquisition of the parent role, coupled with the lack of a partner and low levels of employment* (Eliason et al., 2009, p.37; hereafter referred to as early parent unmarried). Eliason et al. grouped cohabiting couples with single individuals, thus “unmarried” is a more accurate term for this status than “no partner.” See Appendix E for more information on cohabitation in this sample. The graph, shown in the first panel of Figure 2, shows the probability of becoming a parent to rise above 80% by age twenty. Also by that age, the probabilities of living at home, being enrolled in school, and having meaningful employment were very low. The probability of being married was low throughout ages 17-30.

The second life path, accounting for 15% of the sample, included the experiences of *the early acquisition of the parent role coupled with a partner and stable full-time work* (Eliason et al., 2009, p.37; hereafter referred to as early parent married). This path was similar to the previous path with regard to the high probability of becoming a parent early in the life course. Likewise there were declining probabilities of living at home and being enrolled in school. However, with a lag of one to two years following parenthood, there

was an increased probability of marrying that reached 80% by age 24. Also, by this age, a better-than-average probability existed for becoming a full-time worker.

The third life path was markedly different from the first two early parent life paths. This path may be described as *a traditional school-to-work transition coupled with negligible family formation* (Eliason et al., 2009, p.37; hereafter referred to as negligible family formation). This path, which represented 29% of the sample, had virtually no probability of marrying or becoming a parent throughout the entire age span. The probabilities of living at home and being enrolled in school were closely aligned and gradually decreased from age 17 to age 25, where they remained steady at moderate to low levels. Complementing this pattern was the rising probability for stable full-time employment which stayed at about 60% by age 23. This was also the age at which the declining probability of being in school crossed with the increasing probability of being employed.

The fourth life path may be described by *a traditional school-to-work transition coupled with delayed family formation* (Eliason et al., 2009, p.37; hereafter referred to as delayed family formation). It represented 19% of the sample and with individuals experiencing very similar school and work patterns to the prior group, but with a gradually rising probability of being married that reached its midpoint at about age 25 or 26. The probability of becoming a parent began to increase more rapidly at about age 27.

Finally, the fifth path may be described by *a traditional school-to-work transition coupled with traditional on-time family formation*<sup>4</sup> (Eliason et al., 2009, p.37; hereafter

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<sup>4</sup> Being “on-time” or “delayed” was a subjective determination made by YDS participants themselves in the Eliason et al. study (2009).

referred to as on-time family formation). It represented 19% of the sample which experienced the school-to-work transition at about age 22. The probability of being married rose from about 20% at age twenty-one to 80% by age twenty-five. The probabilities of becoming a parent mirror those rates with about a 1-year lag until about age 26 when they slightly exceeded the probabilities of being married.

### **Data Management**

Although not all data from the YDS are presently publicly available, secondary use of the data has been encouraged by the project investigators for individual and collaborative life course studies. The project is housed in the sociology department at the University of Minnesota. The data have been used in many conference presentations, edited books, journal articles, and other scholarly works. More information is available at: [www.soc.umn.edu/research/yds](http://www.soc.umn.edu/research/yds).

Permission to use a selection of YDS data was obtained from the principal investigator and an assistant provided an SPSS file with requested variables. Study participants were identified only by identification numbers in the dataset. Use of the information for this project was approved by the Internal Review Board (IRB) of the University of Minnesota via an expedited review process (see Appendix F).

All recoding of these data, descriptive statistics, and graphing were completed using SPSS software and all growth curve modeling was completed using AMOS software. AMOS is SPSS-compatible software commonly used for structural equation modeling (SEM) applications and is particularly well known for its easy-to-use graphical interface (Arbuckle, 1999). The latent growth curve models estimated in this study are a

specialized form of structural equations based on repeated measures at equally spaced intervals (Hox, 2002). Willet and Sayer (1994) showed that the SEM approach for estimating growth curve trajectories was fundamentally equivalent to hierarchical linear modeling (HLM). Each approach has relative strengths and weaknesses. For instance, HLM is needed when the timing for the measurement of the repeated measures is unique for each case, but that was not a concern in this study because each wave assessed all participants. The strengths of the SEM approach include the ability to use maximum likelihood estimation, the ability to incorporate latent variables (in this study parental SES was a latent variable predictor), greater freedom to model associations between error terms, and the provision of greater information about model fit (Byrne, 2001; Hox).

Several specialized settings were used in AMOS to meet the basic statistical assumptions of growth curve analysis (listed in Appendix G). A number of other publications were consulted to enrich the author's understanding of growth curve modeling issues including life course perspectives applied to modeling change (George, 2008; Raudenbush, 2001), study design and execution (Alwin, Hofer, & McCammon, 2006; Duncan & Duncan, 2004; Karney & Bradbury, 1995), time scaling and intercepts (Biesanz, Deeb-Sossa, Papadakis, Bollen, & Curran, 2004; Mehta & West, 2000), modeling slope parameters (Burchinal & Applebaum, 1991), and graphing growth curve trajectories (Mirowsky & Ross, 2007b).

***Missing data.*** A number of strategies were implemented to address issues related to missing data, some of which have been mentioned previously. Amongst longitudinal studies, the YDS is noted for its high level of retention and reenrollment of participants.

The lowest rate of retention was 71% across waves of data used in this study. Among the strategies that may have accounted for this high rate of retention in a longitudinal study was the practice of asking participants to list the names and contact information of “one friend and one relative” who researchers could contact if they were unable to reach the participant. Participants were also given a stipend for participating.

Life pathways with high rates of attrition were excluded from this research. The five groups having a meaningful life path descriptor totaled 732 individuals. The number of occasions of repeated measures for the dependent variables was assessed for every individual and those with less than two occasions of measurement were dropped from the study (see Appendix A). The amounts of missing data for the 732 individuals categorized by life paths were examined; all of these participants had at least two repeated measures of financial self-reliance and economic pressure. The background variables had less than 4% missing data, except for the measure of academic achievement which had 11% missing data. The AMOS program uses Full Information Maximum Likelihood (FIML) estimation procedures to derive estimates of missing data and this function was used in all the growth curve analyses (Arbuckle, 1999).

### **Analytic Strategy**

This study is based on six research questions (RQ1-RQ6). Multinomial logistic regression was used to understand whether background variables predicted the transition to adulthood life paths (RQ1). The early parent unmarried and minimal work life path was used as the omitted comparison group under the assumption that greater financial difficulties would exist for this group. The remaining research questions (RQ2-RQ6)

relied on latent growth curve models in a structural equation modeling framework.

Generally, latent growth curve modeling occurs in stages that are comparable to the two-level approach used in hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002).

In the first stage (Level 1), several baseline models were tested and compared to narrow to an accurate picture of how a variable changes over time within individuals. Each of these models, defined by the underlying type of trajectory to be tested, was specified by the researcher through the inclusion of latent intercept and various slope parameters. These parameters expressed the wave at which the intercept was set and the type of change occurring over time via the weighting of factor loadings. (These factor loadings function the same way that the time variables do in HLM approaches). Because each model of change must be specified by the researcher, it is common practice to first examine raw mean scores which help approximate plausible types of trajectories, and to test a variety of plausible models to find the best fitting baseline model.

***Level 1 baseline models.*** In growth-curve adaptations of structural equation modeling, the level 1 baseline model equates with the measurement model of within person change over time. The general form for a “level 1” within-person model of change, based on SEM notation adapted from Hox (2002) suggesting a “curvilinear” trajectory, can be written as:

$$Y_{it} = \pi_{0i} + \pi_{1i}(\lambda_t) + \pi_{2i}(\lambda_t^2) + e_{it} \quad (1)$$

where  $Y_{it}$  represented the level of the outcome (financial self-reliance or economic pressure) for individual  $i$  at time  $t$ ;  $\pi_{0i}$  represented a latent *intercept* which varies for each individual and was an estimation of the outcome on the first occasion of measurement;  $\pi_{1i}$ , and  $\pi_{2i}$ , were *slope* parameters used to specify an underlying pattern of change in the trajectory over time (i.e. growth). These slope parameters were scaled to the passage of time via a series of factor loadings corresponding to each repeated measure of the outcome. For a *linear* slope with regularly spaced intervals, the factor loadings were numbered,  $\lambda_t=(0, 1, 2, 3, 4, \dots)$  and for a *quadratic* slope the factor loadings were squared,  $\lambda_t^2=(0, 1, 4, 9, 16, \dots)$  for each occasion of the repeated measures. Finally, an error term,  $e_{it}$ , captured the residual quantities at each time point for each individual that were not accounted for by the rest of the equation.

The underlying baseline pattern of change defined in Equation 1 suggested a curvilinear pattern with a bend somewhere in the trajectory. A simpler, linear pattern of change could be estimated by removing the quadratic term,  $\pi_{2i}(\lambda_t^2)$  and a more complex curvilinear pattern, one with two bends, could be estimated by adding a cubic term to the equation,  $\pi_{3i}(\lambda_t^3)$ . Other possibilities included estimating multiple linear slopes for different segments of the trajectory (a spline model) or modeling accelerated growth that tapered off at an earlier or later time (a logarithmic model; Duncan & Duncan, 2004). Regardless, the overall purpose of the baseline model was to closely estimate the type of systematic change in the outcome that participants experienced over time.

***Adding level 2 predictors to the equation.*** Once a baseline model was specified that adequately fit the pattern of the trajectories over time within persons, a subsequent

step introduced variables that might predict differences in the trajectories between individuals. For instance, there could be systematic reasons individuals varied in their levels of the outcome at the first observation (intercept) or in the ways that change took place afterward (slopes).

Level 2 predictors of the between-person differences were inserted into the overall equation through regressions predicting the intercept and slope parameters of the baseline model. In the previous example, there was an intercept parameter  $\pi_{0i}$ , and two slope parameters, one for the linear component  $\pi_{1i}$ , of change over time and the other for the quadratic component,  $\pi_{2i}$ . Thus, there were three expansions of the original equation:

$$\begin{aligned}\pi_{0i} &= \beta_{00} + \beta_{01}(X_{1i}) + \dots + \beta_{0k}(X_{ki}) + r_{0i}, \text{ and} \\ \pi_{1i} &= \beta_{10} + \beta_{11}(X_{1i}) + \dots + \beta_{1k}(X_{ki}) + r_{1i}, \text{ and} \\ \pi_{2i} &= \beta_{20} + \beta_{21}(X_{1i}) + \dots + \beta_{2k}(X_{ki}) + r_{2i},\end{aligned}\tag{2}$$

where the  $X_{1i}$  through  $X_{ki}$  were the predictor variables 1 through number  $k$  for each individual  $i$  which predict the intercept  $\pi_{0i}$ , and linear  $\pi_{1i}$ , and quadratic  $\pi_{2i}$  slope parameters. The associated  $\beta$  coefficients were of key interest as they expressed the effects of predictors on the components of the slope. Finally, there were three residual error terms  $r_{0i}$  to  $r_{2i}$  accounting for the remaining variance in the intercept and slopes that was not accounted for by the predictors.

RQ2 calls for a level 1 investigation of the type of trajectory (i.e. linear, curvilinear, etc.) that best explains each outcome over time. The follow-up question

inquires whether there were significant amounts of variation between individuals in those trajectories. The baseline model was selected from a variety of plausible baseline models that were tested and compared for the best fit (Duncan & Duncan, 2004; Karney & Bradbury, 1995). Deriving an adequate baseline model required that the investigator correctly specified how change in the phenomena proceeded over time. This was essentially, an informed trial-and-error process based on awareness of the raw mean scores of the outcomes that were plotted over time. These mean-score plots were suggestive of the types of trajectories that might best fit the trajectories of the individuals in the sample.

Because this study placed a heavy emphasis on the life paths, the raw mean scores of the dependent variables were also investigated for each life path group in addition to the overall mean scores (Karney & Bradbury, 1995). From this information, several feasible models were tested and the fit statistics compared to arrive at the best baseline model. The best-fitting baseline model needed to meet or exceed established fit criteria for testing of structural equations to be acceptable. These fit statistics were introduced and described in the findings section.

Once the best fitting model was determined, the variance estimates from the model were examined. When there was a significance amount of variation in the latent intercept or slope variables that make up the trajectory, the growth curve modeling process was moved to level 2 of the analysis with the introduction of variables predicting the latent intercepts and slopes that make up the trajectories (Raudenbush, 2001).

Research questions RQ3 to RQ5 addressed the effects of these level 2 predictors that

might have impacts on the latent intercepts (the starting points for each trajectory) and the latent slopes (the type of change in the trajectory over time). The level 2 effects predicted differences between the different trajectories of each individual in the sample.

RQ3 asked whether background variables were predictors of financial self-reliance and economic pressure trajectories. Predictors were inserted into the level two equations of the growth curve model with regression pathways predicting the latent intercept and slope variables.

RQ4 asked whether effects of the life paths mediated the relationships between the background variables and the outcomes. This was the same as asking whether background had an influence on financial self-reliance and economic pressure *because* it influenced selection into particular life paths, or whether background variables had an influence regardless of the life path taken. To arrive at an answer, several sets of findings needed to be evaluated. The findings from the multinomial regressions determined whether background variables predicted selection into the life paths. Changes in significance of the effects of background variables on the trajectories before and after the life paths were introduced to the model indicated the extent to which the life paths are mediating variables (Baron & Kenny, 1986).

RQ5 asked whether gender and the life paths interacted to produce differences in the way that financial self-reliance and economic pressure change over time. To discover these effects, all predictors except gender and the life paths were removed from the model and five new variables that were interaction terms between gender and the life

paths were introduced. This permitted investigation of whether there were differences by gender within any of the life paths independent of gender differences in general.

RQ6 asked whether the financial self-reliance and economic pressure trajectories were associated with one another. To derive an answer, correlations between the predicted components of the baseline models for each outcome were assessed as well as Pearson correlations between the observed variables within each wave.

*Statistical power.* Because latent growth curves analysis is an adaptation of structural equation modeling (SEM; Willett & Sayer, 1994), requirements for obtaining recommended power generally follow from the existing “rules of thumb” for SEM. Regardless of context, sample size, effect size, and Type 1 error rates, are all factors in determining power (Cohen, 1988). Using the traditional alpha level of .05 and power=.80, MacCallum, Browne, and Sugawara (1996) empirically devised a way to assess whether this power threshold has been attained in SEM procedures using sample size and the degrees of freedom of the chi-square test. More degrees of freedom indicate that the amount of information that must be estimated is small in comparison to the information used to make the predictions. In other words, in SEM, degrees of freedom increase as the number of observed variables in proportion to the number of latent variables and the relationships between them increases. With the smallest sample size in this study ( $N=732$ ), twelve or more degrees of freedom needed to be achieved to maintain power of .80 or higher (see McCallum et al.). In this study, none of the findings<sup>5</sup> were based on a model with power less than .80; the lowest degrees of freedom to appear

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<sup>5</sup> There were some rejected baseline models that had lower power, and there was one accepted model that had  $df = 10$ , but that model also had a larger sample size ( $N = 811$ ) and still exceeded power = .80 (see McCallum et al.).

in any accepted model (several baseline models were rejected because of poor fit) was  $df=18$ .

## Chapter IV: Findings

This chapter was organized according to the six research questions guiding the study. Four major sections were written. The first section addressed RQ1 by reporting findings of multinomial logistic regressions. The second section addressed RQ2a, RQ3a, RQ4a, and RQ5a by reporting findings of latent growth curve analyses of *financial self-reliance*. The third section addressed RQ2b, RQ3b, RQ4b, and RQ5b by reporting findings of latent growth curve analyses of *economic pressure*. The final section addressed RQ6 by reporting correlations between latent growth curve parameters of financial self-reliance and economic pressure.

The research questions were restated at the beginning of each section providing answers to those questions. Findings in the second section were accompanied by a more detailed description of data analysis processes compared with details of processes given in the third section because similar processes were used to produce each set of findings. For instance, rules-of-thumb for model fit statistics were given in the second section but were not repeated in the third. A final summary statement containing a brief overview of the essential findings was placed at the end of the chapter.

### **Multinomial Logistic Regressions**

***RQ1: Did background variables; including gender, ethnic/racial minority status, family structure, parental SES, and high school academic achievement predict transition to adulthood life paths?*** Many of the background variables predicted selection into life paths. Although none of the background variables distinguished between those

who were in the two early parenthood groups, gender, ethnic/racial minority status, parental SES, and high school academic achievement distinguished those who were in the early parent unmarried group (and by extension those in the early parent married group) from those in groups with traditional school-to-work transitions and later family formation. Family-of-origin structure, however, did not distinguish between groups (except when it was tested alone). Details of these findings were reported in Table 3.

Table 3. Odds Ratios from Multinomial Logistic Regressions Predicting Selection into Life Paths

Background Variables	Latent Life Paths			
	Early parent, married, full-time worker (n=112)	School-to-work, negligible family formation (n=199)	School-to-work, delayed family formation (n=148)	School-to-work, on-time family formation (n=124)
Female	0.70	0.36***	0.36***	0.67
Ethnic/racial minority	0.69	0.54*	0.69	0.54*
Family structure (ages 14-15)				
Intact two-parent (omitted)	1.00	1.00	1.00	1.00
Stepparent	0.77	0.56	0.51	0.77
Single parent	0.93	1.12	1.06	0.82
Other arrangement	0.27	0.53	0.45	0.52
Parental SES (ages 14-15)				
Level of income	0.95	1.20**	1.22**	1.17*
Level of education	1.15	1.31**	1.34***	1.20*
Grade point average (ages 17-18)	1.21	1.56**	2.00***	1.92**
Likelihood ratio test		$\chi^2=140.35$ (df=32), $p>.001$		
Nagelkerke pseudo R <sup>2</sup>		.182		

Note: The comparison latent life path was early parent unmarried, minimal work (n=149). Levels of income ranged from 1-13. Levels of education ranged from 1-8. \* $p<.05$ , \*\*  $p<.01$ , \*\*\*  $p<.001$ .

Results of multinomial logistic regressions predicting selection into life paths with background variables as predictors were given in the form of odds ratios (Table 3). Odds ratios expressed the effect of a predictor on being in a life path group relative to being in the reference group. The reference group was early parent unmarried, and participants in this group had minimal work engagement during their transition to adulthood. None of

the background characteristics significantly distinguished this group from the early parent married group whose members were more engaged in full-time work. Background variables, however, distinguished the early parent unmarried group from three groups who underwent school-to-work transitions and postponed family formation until later in life. Odds ratios showed that females, compared to males, had 64% lower odds of being in the negligible family formation group ( $OR=0.36, p<.001$ ) or in the delayed family formation group ( $OR=0.36, p<.001$ ) relative to being in the early parent unmarried group. Being in the ethnic/racial minority, compared with being White and non-Hispanic, was associated with 46% lower odds of being part of groups that included negligible family formation ( $OR=0.54, p<.05$ ) or on-time family formation ( $OR=0.54, p<.05$ ) relative to being in the early parent unmarried group.

Family-of-origin structure when participants were age 14 was not associated with any significant differences in the life paths of the participants when it was tested with the other background variables.<sup>6</sup> Parental SES variables, however, including parent income and education when the participants were age 14, were associated with greater odds of being in a life path with a traditional school-to-work transition rather being in an early parenthood group. For instance, each increment of income on the 13-point scale was

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<sup>6</sup> At a reader's request, a separate set of multinomial regressions was tested to see whether family structure would predict selection into life paths without the other social background variables in the model. Four significant differences appeared in contrast to the early parent unmarried reference group. Those from single parent families were about half as likely to select into the on-time family formation group ( $OR=.50, p<.05$ ) or the delayed family formation group ( $OR=.55, p<.05$ ) in comparison to the reference group. Similarly, those from step-parent families experienced less than half the odds of selecting into the delayed family formation group ( $OR=0.41, p<.05$ ) or the negligible family formation group ( $OR=0.46, p<.05$ ) in comparison to the reference group. The fact that these significant findings occurred only after other social background variables were removed from the analyses suggested that family structure affected movement into particular life paths via family structure's influence on other malleable and more proximal social background factors. For instance, family structure may have influenced parent socioeconomic status and the young person's academic achievement, and had its effects on selection into the life paths transmitted through these variables (a mediated process).

respectively associated with 20%, 22%, or 17% increased odds of having negligible family formation ( $OR=1.20, p<.01$ ), delayed family formation ( $OR=1.22, p<.01$ ), or on-time family formation ( $OR=1.17, p<.05$ ). Similar results were obtained from levels of parent education; each increment of education on the 8-point scale was respectively associated with 31%, 34%, or 20% increased odds of experiencing a traditional school-to-work transition and having negligible family formation ( $OR=1.31, p<.01$ ), delayed family formation ( $OR=1.34, p<.001$ ), or on-time family formation ( $OR=1.20, p<.05$ ). Appreciable selection effects resulted from high school academic achievement measured by participants' GPAs recorded at age 17. Each grade point difference, such as an "A" versus a "B" grade, was associated with 56% greater odds of being in the negligible family formation group ( $OR=1.56, p<.01$ ), 100% greater odds of being in the delayed family formation group ( $OR=2.00, p<.001$ ), and 92% greater odds of being in the on-time family formation group ( $OR=1.92, p<.01$ ) relative to being in the early parent unmarried group. All of these reported effects were net of other predictors in the model which together accounted for 18% of the variance in selection into life paths.

### **Financial Self-Reliance Latent Growth Curves**

*RQ2a: What type of trajectory best described change in financial self-reliance in early adulthood? Was there significant variation in individual patterns of change over time?* Answers to these questions provided important baseline information before proceeding to later steps in the analysis. As outlined in the previous chapter, the first step in implementing latent growth curves was to investigate possible types of change trajectories in the repeated measures of financial self-reliance. Pearson correlations

between repeated measures provided evidence for continuity or discontinuity over time. By graphing the raw mean scores of the repeated measures it was easier to visualize potential patterns of change, which were empirically tested for the best fit. Once the best fitting model was discovered, the amount of variance among individual trajectories was examined. If there were significant amounts of variance then predictors of between-person differences in the trajectories were introduced in subsequent steps. The following analyses revealed that a cubic trajectory with a rise-fall-rise-again pattern best described the average within-person levels of financial self reliance over time. Furthermore, there were significant amounts of variation between individual trajectories. This enabled the introduction of predictor variables to account for differences between individuals. Details of these findings were given as follows.

Table 4 contains Pearson correlations of the raw repeated measures of financial self-reliance from age 23 to 31. Correlations ranged from  $r=.24$  to  $r=.69$  and thus were mostly moderate in size. All were positive as was expected for repeated measures. The findings revealed a typical time-lag decay pattern commonly associated with repeated measures.

Table 4. Correlations between Repeated Measures of Financial Self-Reliance

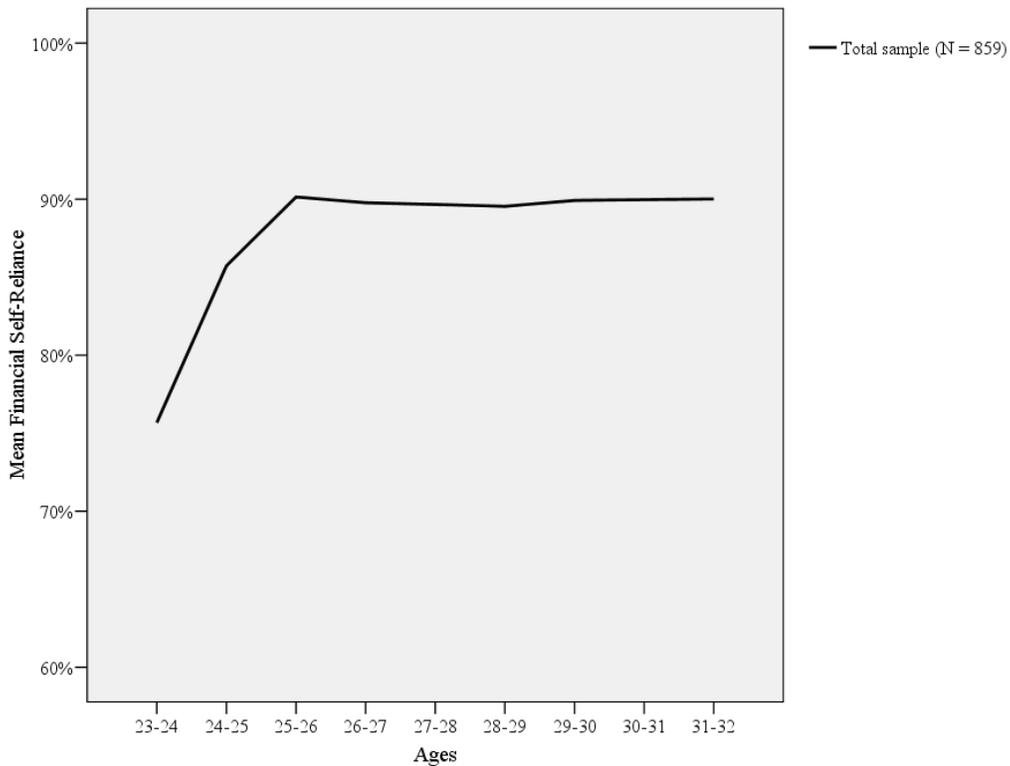
Financial self-reliance	1	2	3	4	5	6	7	8
1. Age 23								
2. Age 24	.55							
3. Age 25	.40	.56						
4. Age 26	.30	.50	.61					
5. Age 27	--	--	--	--				
6. Age 28	.30	.44	.39	.40	--			
7. Age 29	.24	.39	.39	.37	--	.54		
8. Age 30	.29	.46	.39	.46	--	.49	.64	
9. Age 31	.28	.42	.43	.45	--	.47	.60	.69

Note: (Ns range from 605-686). Hyphens (--) indicate waves in which no data collected.

The variables with one-year time lags, located in the upper-most diagonal generally had stronger relationships than those falling below this line which represented associations across longer time spans.

Figure 3 contains a plot of the raw mean levels of financial self-reliance over time for a sample comprised of respondents with two or more repeated measures ( $N=859$ ). Average respondents in the sample were about 75% financially self-reliant at age 23 with sharply increasing rates over the next two years, reaching a level of roughly 90% by age 25. Thereafter, levels of financial self-reliance were essentially the same up to age 31. This graph, however, masked potential differences between life path subgroups.

Figure 3. Observed Means of Financial Self-Reliance

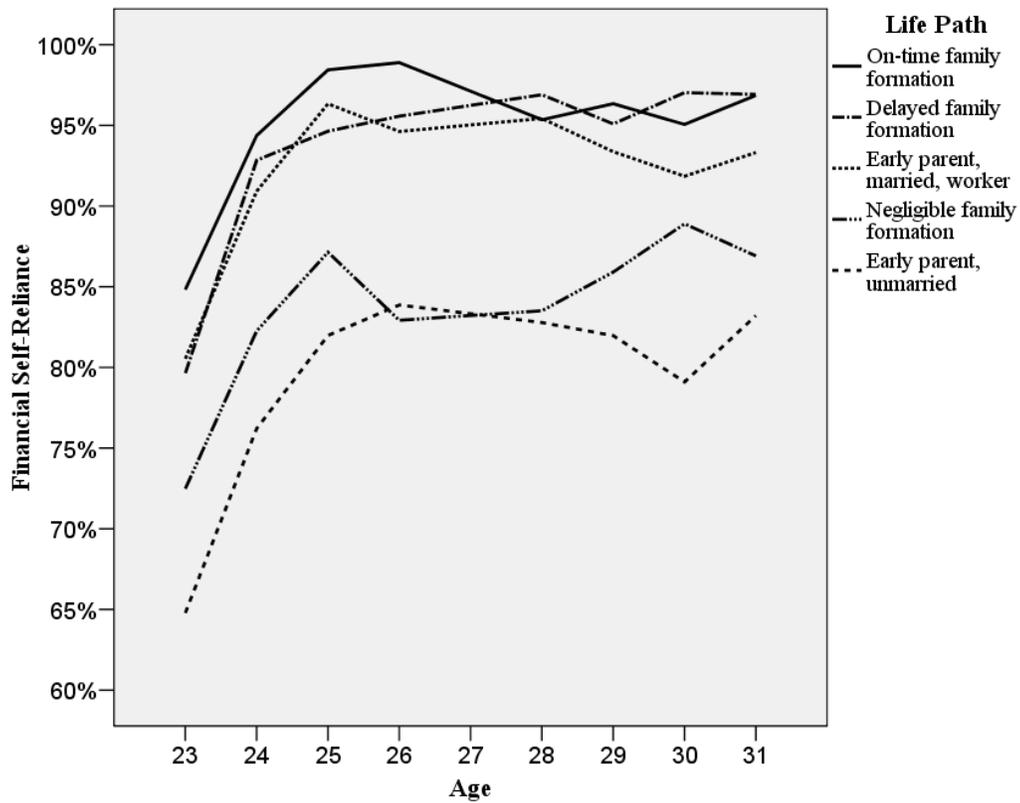


Note: ( $N=859$ ). A mean of immediately prior and later years was shown at age 27.

Because life paths were central to the research questions and purpose of the study, the mean scores of financial self-reliance for each life path group were also plotted.

Figure 4 provides plots for mean scores of financial self-reliance for each of the life path groups in the sample. Several observations were readily apparent in this graph. Although some similarities in the progression of financial self-reliance for each of the groups were evident, important differences in the initial levels were perpetuated over time. At age 23, the group with the lowest average level of financial self-reliance, the early parent unmarried group, was 65% financially self-reliant.

Figure 4. Observed Means of Financial Self-Reliance for Life Path Groups



Note: (N=732). Means of immediately prior and later years were shown at age 27.

At the same age and somewhat higher on average, the negligible family formation group was 72% financially self-reliant. Two other groups had similar average levels of financial self-reliance that were yet even higher at age 23, the delayed family formation group which was 80% financially self-reliant and the early parent married group which was 81% financially self-reliant. Finally, the on-time family formation group was 85% financially self-reliant on average at age 23.

The dynamics of financial self-reliance manifested in the mean scores over time were somewhat complex. Most averages of the groups rose sharply until they peaked at age 25 or 26. Afterwards, the averages for most of the groups declined, with most groups then rising again near the latter end of the age spectrum which ended at age 31. The low points in the mid-to-later 20s in each of the groups were staggered at different ages. These dynamic patterns that offset the groups' average highs and lows at different ages contributed to the apparent uneventful change after age 25 that was suggested in the graph of the total sample's averages.

The pattern of financial self-reliance for the negligible family formation group was most unique, with a sharply declining level of financial self-reliance from age 25 to 26, a level of financial self-reliance that was not fully restored until age 30. Appendix H shows the relative mix of parent support and government assistance that made up the difference in living expenses not covered through financial self-reliance. The negligible family formation group had comparatively heavy dependence on parent support throughout the age span, and some increases in government assistance beginning at age 26 (along with miscellaneous *other* supports different from those already mentioned) that

filled this 4-5 year gap in financial self-reliance for the group; whereas the two early parenthood groups relied most heavily on government assistance.

Building on the information gathered in the previous graphs, several baseline latent growth curve models were tested to empirically fit a baseline model to these data. Two aims were followed for creating the baseline latent growth curve model of financial self-reliance. The first goal was to achieve an acceptable model fit to the observed values, and the second goal was to do this as simply as possible. Because more complex models incorporate the slope components of simpler baseline models, a series of baseline tests were completed to derive the most acceptable baseline model.

Table 5 shows the fit statistics of six baseline models that were tested. The chi-square fit statistic in these models constituted a measure of difference between observed scores in the data and the model estimates. Thus, lower chi-squares indicated a closer match to the data and were used as evidence of better fit. The chi-square value and degrees of freedom are associated with a *p*-value which when non-significant indicates an excellent fit to the data. Because chi-square statistics, however, were influenced by large sample sizes and model complexity, a number of other fit statistics were also relied upon to indicate good or acceptable fit. These included the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Values of the CFI and TLI above .95 indicated a good fitting model and above .90 indicated an acceptable model. For the RMSEA, values less than .05 indicated good fit and less than .08 indicated acceptable fit. Generally, multiple fit statistics were used in assessing the fit of suitable baseline models.

Table 5. Fit Statistics for Baseline Latent Growth Curve Models of Financial Self-Reliance

Model	$\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA
Level	1064.3	41	<.001	.552	.607	.171
Linear	663.5	38	<.001	.726	.741	.139
Quadratic	353.6	34	<.001	.860	.852	.105
Cubic	169.1	29	<.001	.939	.924	.075
Spline	218.2	34	<.001	.919	.915	.080
Logarithmic	415.8	38	<.001	.835	.843	.108

*Note:* (*N*=859). CFI is the comparative fit index, TLI is the Tucker-Lewis index, and RMSEA is the root mean square error of approximation. The spline model is composed of two separate linear slopes which join at age 25.

The baseline models each represented a different type of trajectory indicating a different pattern of change. The type of trajectory which best estimated the repeated measures for each participant had the best fit.

The first of the tested baseline models was a *level* model predicting differences in initial values of financial self-reliance between individuals, but this model did not predict changes over time. Table 5 shows that this model fit poorly. The second model, a *linear* model, proposed differences in initial levels of financial self-reliance *and* changes over time would be linear for each individual. This model also fit poorly. A third, *quadratic* model introduced the possibility for non-linear, but strictly convex or concave change in financial self-reliance for individuals over time. This model was also not acceptable. The fourth model, a *cubic* model permitted two changes in the direction of the financial self-reliance trajectory. This model met criteria for acceptable fit; the CFI=.939, and the TLI=.924, were above .90 and the RMSEA=.075, was below .08.

Note also that the cubic type trajectory (allowing two bends) fit not only the data of individuals but was similar to the mean trajectories suggested previously when the raw

means for the life path groups were graphed. Nevertheless, two other possible types of trajectories merited testing based on the overall raw sample means that were plotted in the beginning of this section. A fifth, *spline* model, tested whether two linear slope segments “hinged” at age 25 would better represent the data. Finally, a sixth, *logarithmic* model tested whether a slope with a decelerating rate of change—steep upward change at first eventually leveling off near an upper asymptote—would better represent the data. Neither of these models fit the data better than the cubic model, thus the cubic model was used as the baseline within-person model of change in financial self-reliance.

The cubic model baseline model of financial self-reliance contained four latent variables that were combined to describe individuals’ growth curves, an *intercept*, and three slope components which were *linear*, *quadratic*, and *cubic*. Note that it was the addition of slope components that built up to the name of the model, which was labeled according to the highest-ordered term (*cubic*). As shown in Table 6, the key results of the baseline model were the means and variances of the intercept and slope parameters; each of these was a latent variable used as a dependent variable in later analyses if they had a significant amount of variance.

Table 6. Estimates for the Cubic Baseline Growth Curve of Financial Self-Reliance

Parameters	Means	SE	Variances	SE
Intercept (age 23)	76.190***	1.163	843.549***	54.692
Linear slope	10.295***	.929	343.672***	34.430
Quadratic slope	-2.303***	.249	18.943***	2.597
Cubic slope	.154***	.019	.091***	.016

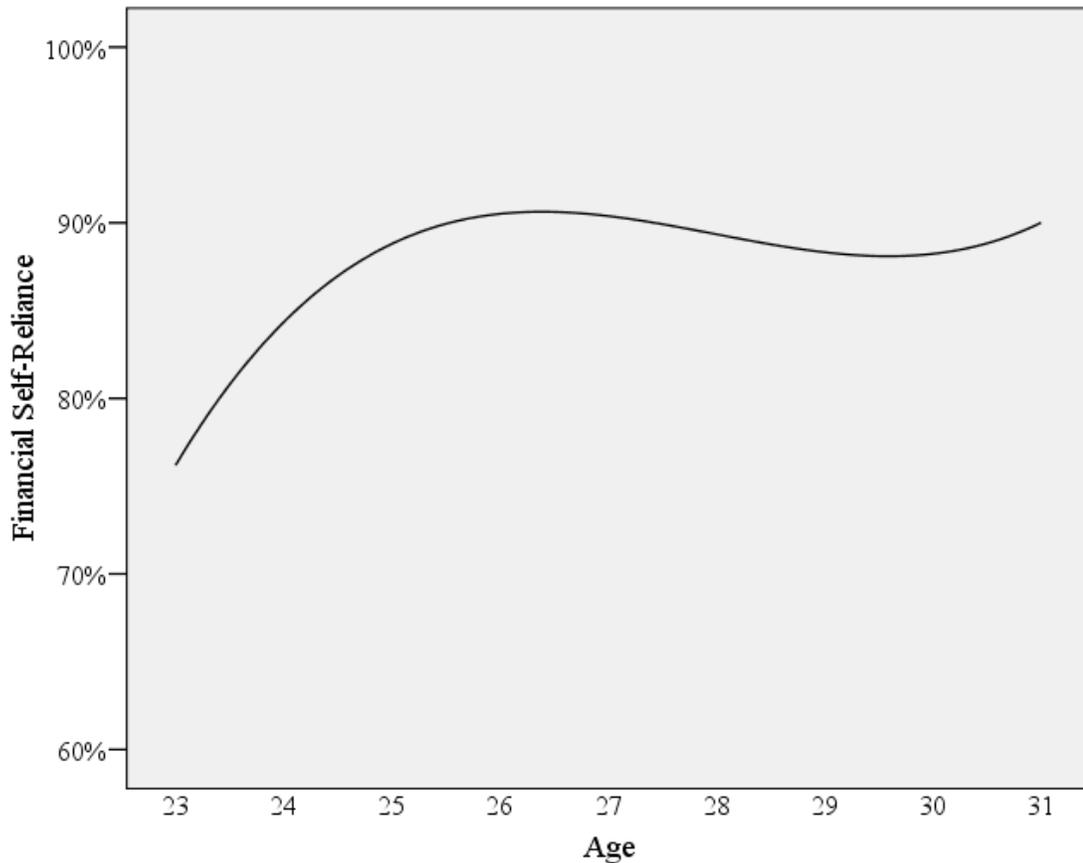
Note: (N=859). \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

If the variances were not significant, there could be no predictors because the parameter would essentially be a constant, meaning that the trajectory of each person in the sample would be statistically the same.

Table 6 shows the mean for the intercept ( $m=76.190$ ) which was the predicted average level of financial self-reliance at age 23 for the sample. Taken together, the signs of the slope components, a positive linear slope ( $m=10.295$ ), negative quadratic slope ( $m=-2.303$ ), and positive cubic slope ( $m=0.154$ ) suggested that, on average, economic self reliance would rise, fall, and then rise again. The significance ( $p<.001$ ) of these parameters indicated simply that they differed from zero. Evidence suggested that predictor variables could also be added to this model. This is because the variances of these parameters were all highly significant,  $p<.001$ , meaning underlying variations might be explainable. A graphic representation of the predicted values in the baseline model of financial self-reliance was shown in Figure 5.

Figure 5 is a graph of the baseline equation showing the estimated average levels of financial self-reliance for the total sample from ages 23-31. The trajectory showed a steep rise in financial self-reliance from a mean of 76% up to about 90% by age 26. Afterward, there was slight decline of a few percentage points before an increase in financial self-reliance again beginning near age 29 or 30. Individual trajectories contributed to a significant amount of variance from this overall mean trajectory.

Figure 5. Estimated Baseline Growth Curve of Financial Self-Reliance



Note: (N=859). This graph is an illustration of means estimates from Table 6.

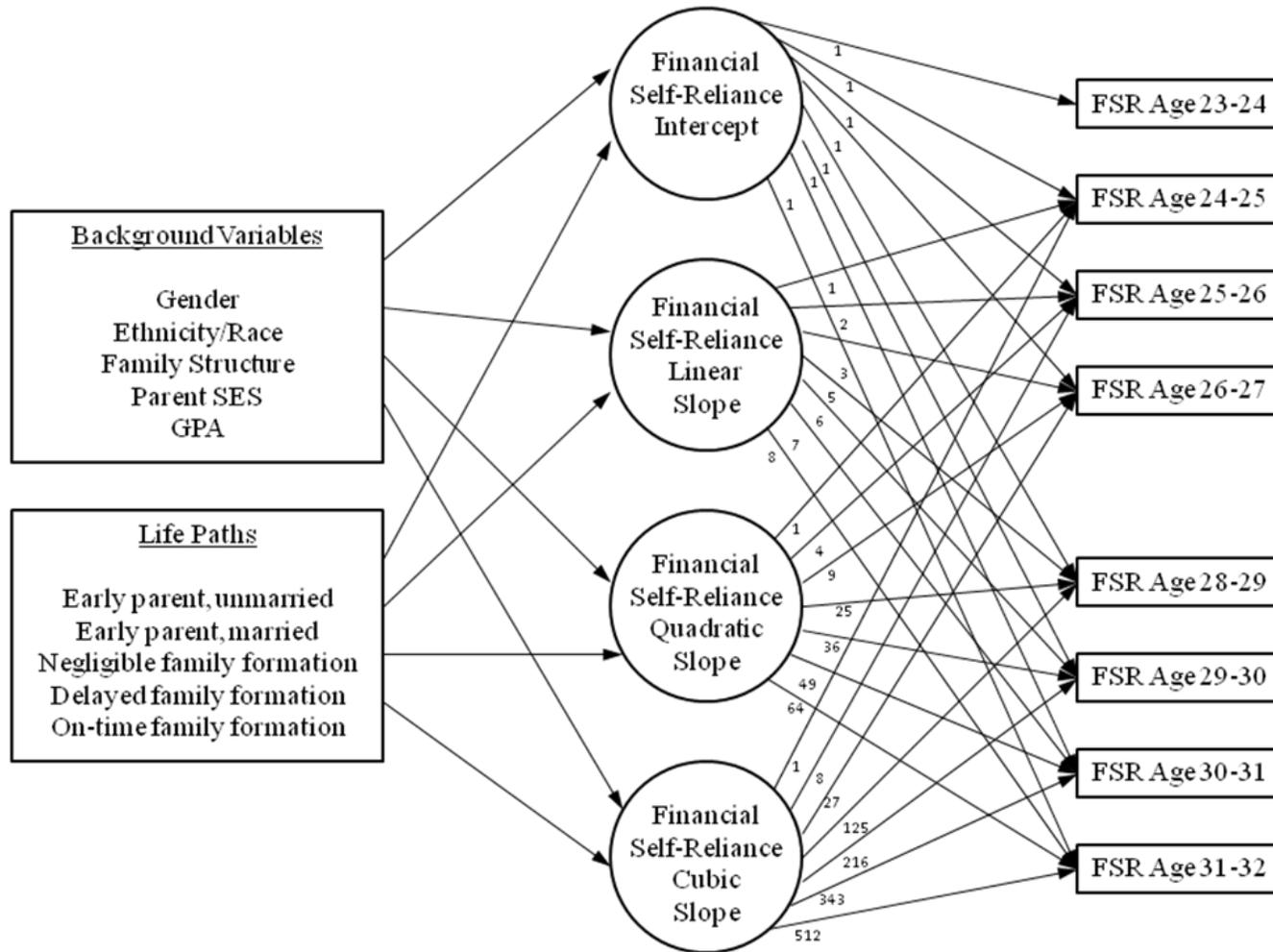
***RQ3a: Did background variables predict differences in individual trajectories of change in financial self-reliance in early adulthood?*** To answer this question, the initial model of financial self-reliance was expanded by introducing background variables as predictors of the intercept and slope components in the baseline model. This critical step moved the investigation forward from an investigation of how financial self-reliance changes *within* individuals (the baseline model) to prediction of changes *between* individuals. Specifically, the investigation considered whether gender, ethnic/racial

minority status, family structure, parental SES, and high school academic achievement had direct impacts on financial self-reliance. The following analyses showed that gender, ethnic/racial minority status, and being in a stepparent versus an intact two-parent family, impacted initial levels of financial self-reliance and GPA impacted its change over time.

Figure 6 is a conceptual model of the predictors of change in financial self-reliance between individuals in early adulthood. The circles in the center represent the latent variable intercept and latent slope components, which, with their paths to the repeated measures of financial self-reliance on the right, constitute the previously accepted baseline model. The variance in these latent variables was proposed to be examined via background variables and life path predictors on the left. (This conceptual model also applies to later research questions involving life paths as predictors.) The element of time for the repeated measures was captured in the scaling of factor loadings associated with each of the arrows from the latent intercept and slopes to the financial self-reliance repeated measures. The loadings for the intercept were scaled as a constant. The scaling of the linear slope component was simply a direct count of time in years since the initial measurement at age 23-24.

The scaling of the quadratic slope component was equivalent to the time since the initial age squared (time to the second power), and the scaling for the cubic slope was equivalent to the time since the initial age cubed (time to the third power). The scaling was adjusted for the year when no data were collected by counting over that year. This conceptual model did not show any of the error terms accounting for the residual variance in latent and observed variables.

Figure 6. Conceptual Model of the Predictors of Change in Financial Self-Reliance (FSR) in Early Adulthood



The paths on the left from the background variables and life path predictors to the latent variables in the center were the regression paths added to expand the baseline equation.

The first model in Table 7 provided estimates answering RQ3a. Model 1 had an acceptable fit with a chi-square of 253.16 ( $df=70$ ,  $p<.001$ ), CFI=.93, TLI=.86, IFI=.93, and RMSEA=.06. On average, females were 7.24 ( $b=-3.62 \times 2$ ) percentage points lower than males<sup>7</sup> on levels of financial self-reliance at age 23. Those who were part of a racial minority group were on average 6.36 percentage points lower than White non-Hispanics. Compared to those who were living in an intact two-parent family at age 14, those living with a step parent were, on average, 7.32 percentage points higher in initial levels of financial self-reliance. Other family structures were not associated with significant differences from intact two-parent families.

Parent socioeconomic status was measured as a latent variable indicated by parent income and education. Parent socioeconomic status did not have significant effects on the growth curve parameters. The effects of GPA on financial self-reliance were manifested in each of the slope components. Each letter grade in GPA was associated with a steeper initial rise in financial self-reliance ( $b=2.70$ ), followed by a steeper decline ( $b=-.92$ ), and subsequent increase again ( $b=0.08$ ).

Figure 7 shows plots of the effects of GPA on the financial self-reliance growth curves while controlling for the effects of parent socioeconomic status, family structure, racial minority status, and gender.

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<sup>7</sup> When gender is coded (-1, 1) the magnitude of the associated effect ( $b$ ) reflects the difference between a gender category and the male-female mean. Thus, doubling the effect size ( $b$ ) gives the difference between males and females. The reason for this manner of coding in these models is to facilitate graphing mean values between males and females when “controlling” for the effects of gender.

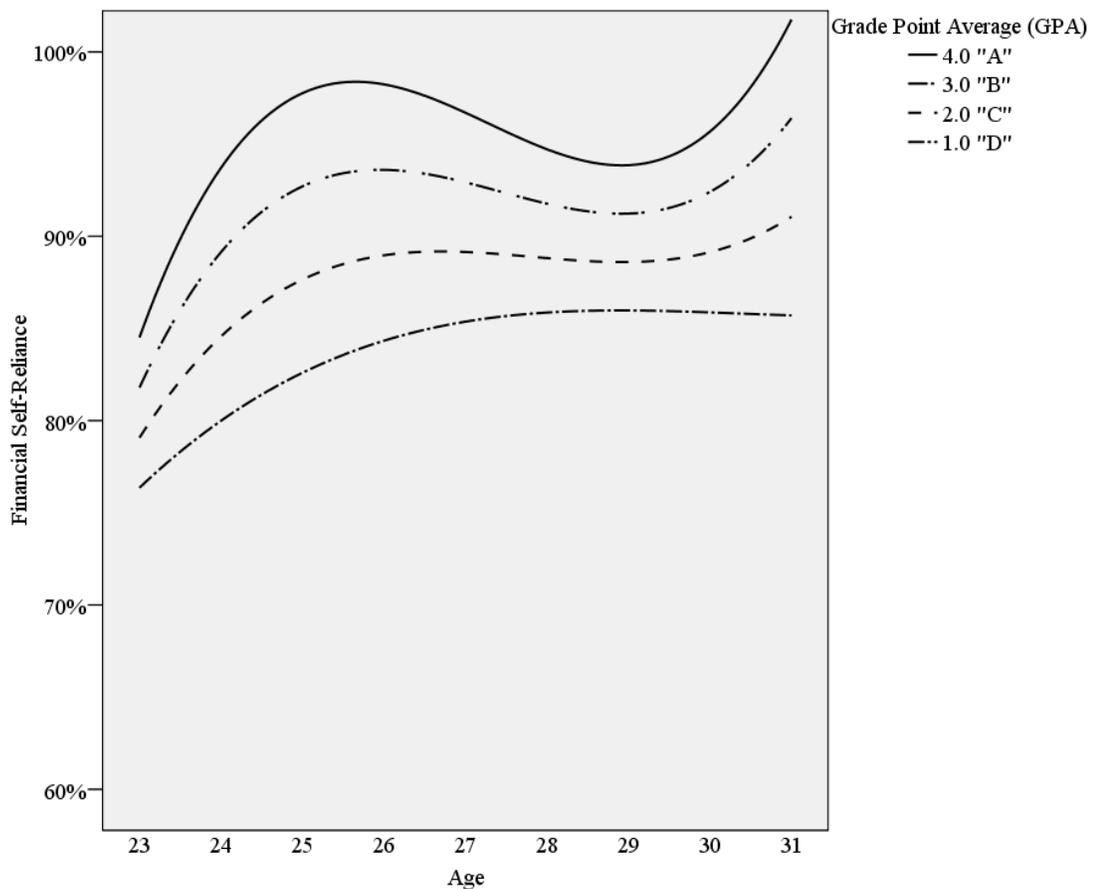
Table 7. Parameter Estimates for Latent Growth Curve Models of Financial Self-Reliance

	Model 1				Model 2				Model 3						
	Intercept	Slope Components			Intercept	Slope Components			Intercept	Slope Components					
		Linear	Quadratic	Cubic		Linear	Quadratic	Cubic		Linear	Quadratic	Cubic			
Constant	70.019***	3.009	.144	-.047	63.983***	14.303***	-3.235***	.216***	61.865***	5.628	-.507	.001			
<i>Background Variables</i>															
Gender <sup>a</sup>	-3.620**	1.505	-.181	.004					-3.353**	1.246	-.109	-.002			
Ethnicity/Race (1=minority)	-6.362*	2.449	-.576	.033					-5.590	2.137	-.501	.027			
<i>Family structure</i>															
Intact two-parent	--	--	--	--					--	--	--	--			
Stepparent	7.319*	-2.643	.434	-.023					7.916*	-3.102	.560	-.032			
Single parent	.348	-.554	.183	-.023					.423	-.422	.152	-.020			
Other arrangement	-6.405	-.189	.525	-.059					-4.436	-.799	.687	-.072			
Parental SES	.594	-.898	.233	-.016					.269	-.802	.214	-.014			
GPA	2.717	2.697*	-.920*	.078**					1.682	2.982*	-1.001**	.084**			
<i>Life Path</i>															
Early parent unmarried					--	--	--	--	--	--	--	--			
Early parent married					17.290***	-3.841	.973	-.075	16.200***	-3.917	1.069	-.086			
Negligible family formation					10.201**	-5.891*	1.281	-.075	7.425	-5.276	1.287	-.087			
Delayed family formation					16.773***	-2.936	.755	-.051	14.054***	-2.703	.880	-.073			
On-time family formation					21.252***	-3.409	.584	-.032	19.091***	-3.489	.740	-.054			
<i>Model Fit</i>															
$\chi^2$ (df) p-value		253.16 (70) <.001					202.88 (45) <.001					284.16 (90) <.001			
CFI, TLI, IFI		.93, .86, .93					.94, .90, .94					.94, .86, .94			
RMSEA		.060					.069					.054			

Note: (N=732). <sup>a</sup> In these models, gender was coded (-1=male, 1=female) this made it easier to generate a male-female mean in later graphs of the trajectory when a “control” for gender was desired. CFI is the comparative fit index, TLI is the Tucker-Lewis index, and RMSEA is the root mean square error of approximation. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Dashes (--) indicate omitted categories.

Although the initial levels of financial self-reliance seemed to differ in the graph, they were not distinguishable statistically ( $b=2.72, ns$ ). However, GPA influenced rates of change over time. At every age, those with higher GPAs were more financially self-reliant. Those with higher grades moved more rapidly than those with lower grades toward independence at age 25 or 26, but also were more likely to experience a decrease in financial self-reliance for some period of time before age 31.

Figure 7. Change in Financial Self-Reliance Associated with High School GPA



*Note:* Based on estimates from Table 7, Model 1. The graph controls for mean levels of parental SES, assume the modal values for family structure (intact two-parent) and ethnicity/race (non-minority), and use male-female mean values.

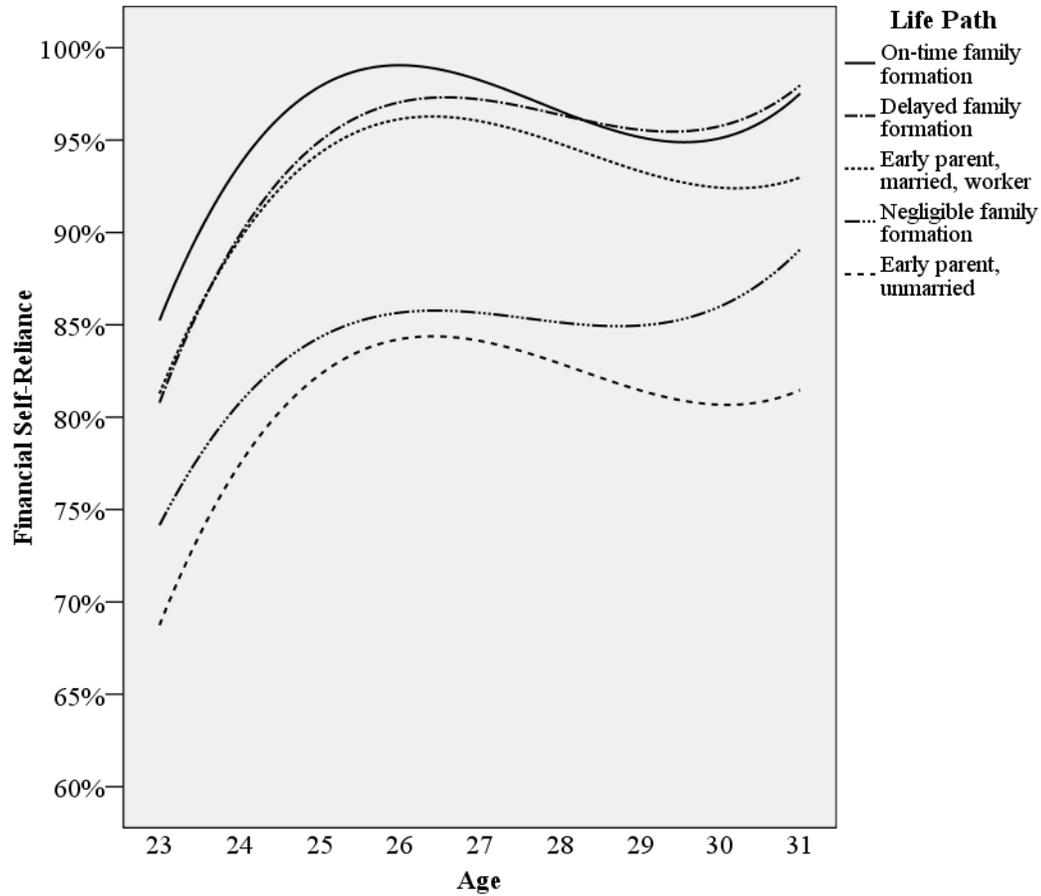
By age 31, those who had earned the highest grade point average were on average fully self-reliant, whereas those who earned a D-level grade had, on average, never risen to a level of financial self-reliance greater than 85%.

*RQ4a: Did the life paths discovered by Eliason et al. (2009) mediate the effects of background variables on trajectories of financial self-reliance?* The second and third models in Table 7 were added to address this question. The examination of evidence for mediation in this study was a multi-step process. The first step was to examine the direct effects of background variables on the outcome as shown in Model 1. Next, there was an investigation of whether the life paths influence financial self-reliance as shown in Model 2. And the final step was to look for changes in significance of the predictors when both sets of predictors were entered into the equation, as shown in Model 3. If the effects of significant background predictors changed with introduction of the life paths, this supports a mediation process. The test of mediation also relied on positive evidence that background variables predict selection into life paths. According to these criteria, the background variables that were candidates for having a mediated relationship with financial self-reliance via the life paths were gender, ethnic/racial minority status, and GPA; these were the only variables significantly predicting both selection into life paths and financial self-reliance. As the following results showed, however, only the relationship between ethnic/racial minority status and financial self-reliance might be mediated by life paths. Although, there was a change in significance, the difference in effect sizes were small providing only minimal evidence for a mediated relationship.

The second model in Table 7 showed the associations of life paths with the trajectories of financial self-reliance. The model had an acceptable fit with a chi-square of 202.88 ( $df=45, p<.001$ ), CFI=.94, TLI=.90, IFI=.94, and the RMSEA=.07. The intercepts for each of the groups differed from the early parent unmarried reference group; all these intercepts were higher. By adding the constant and the estimate for the intercept, estimates of the average financial self-reliance for each of the five groups, at age 23, were determined. The initial level of financial self-reliance was 64% for the early parent unmarried group, 81% for the early parent married worker group, 74% for the negligible family formation group, 81% for the delayed family formation group, and 85% for the on-time family formation group. The linear slope component of those in the negligible family formation group was significantly different by being less steep ( $b=-5.89$ ) than those in the early parent unmarried group. The absence of financial self-reliance may have contributed to the absence of family formation, and vice versa. It is important to note, however, that all of the groups experienced a fairly steep rise in financial self-reliance from age 23 up to age 25 or 26 followed by some mild declines or leveling off before rising again.

Figure 8 shows the financial self-reliance trajectories associated with life paths. They were comparable to the observed means shown in Figure 4. It was noteworthy that three groups who experienced high rates of marriage, whether this occurred early, on-time, or was delayed, experienced similarly high levels of financial self-reliance, while those who largely remained unmarried (including those who did and did not become parents early on) experienced less financial self-reliance.

Figure 8. Change in Financial Self-Reliance Associated with Life Paths



*Note:* Based on estimates from Table 7, Model 3. The graph controls for mean levels of parental SES, mean GPAs within each group, assume the modal values for family structure (intact two-parent family) and ethnicity/race (non-minority), and use male-female mean values.

The third model in Table 7 provides estimates with background and life path predictors in the model. Of greatest interest in this model was whether meaningful changes occurred in the effects of the background variables. This determination was made by comparing changes in coefficients from Model 1 to Model 3 in significance and magnitude. Little evidence of mediation via life paths existed with one exception; there

was partial mediation of the effects of racial/minority status with the introduction of life paths. Comparing Models 1 and 3, the effect of being in the racial minority ( $b=-6.36$ ,  $p<.05$ ) weakened and became nonsignificant ( $b=-5.59$ ,  $ns$ ) when tested with the life paths. Although the significance changed, the magnitude of the difference was small. To the extent there were mediated effects of ethnic/racial minority status on financial self-reliance via life paths, it was probably due to the greater odds minorities would assume a life path associated with less financial self-reliance.

***RQ5a: Did gender and the life paths interact in predicting financial self-reliance trajectories?*** Due to the implications for gender differences in family formation and socioeconomic development, a final model was used to test for interaction effects of gender by life paths on the trajectories of financial self-reliance. In prior analyses, females had a higher tendency to follow the early parenthood paths. One of the early parenthood groups, the unmarried group, had the lowest levels of financial self-reliance. Thus, this research question hinges on two types of gender effects, whether gender made a difference in life paths for males and females (which it did), and within each life path group, whether gender was associated with differences in financial self-reliance trajectories. The following findings showed that females had less financial self-reliance in the early years (approximately ages 23-26) within the early parenthood groups, but later, and in the other life path groups, males and females were similar.

Table 8 provides the evidence for this latter type of effect. First, there were various effects on the intercept.

Table 8. Gender Interactions with Life Paths Predicting Latent Growth Curves of Financial Self-Reliance

	Intercept	Slope Components		
		Linear	Quadratic	Cubic
Constant	84.765***	5.227	-1.864	.155
<i>Background Variables</i>				
Gender (1=female)	-29.709***	12.962**	-1.960	.088
GPA				
<i>Life Path</i>				
G1. Early parent unmarried <sup>a</sup>	--	--	--	--
G2. Early parent married	7.390	.432	.233	-.029
G3. Negligible family formation	-14.093*	4.812	-.512	.017
G4. Delayed family formation	-4.428	6.046	-.580	.007
G5. On-time family formation	4.127	4.002	-.408	.005
<i>Interactions</i>				
Gender X G1 early parent <sup>a</sup>	--	--	--	--
Gender X G2 early parent married	12.505	-5.474	.992	-.066
Gender X G3 negligible	36.782***	-16.213**	2.804	-.149
Gender X G4 delayed	30.567***	-12.797*	1.895	-.081
Gender X G5 on-time	24.060**	-10.395	1.376	-.050
<i>Model Fit</i>				
$\chi^2$ (df) p-value		214.10 (65) <.001		
CFI, TLI, IFI		.98, .94, .98		
RMSEA		.056		

Note: (N=732). CFI is the comparative fit index, TLI is the Tucker-Lewis index, and RMSEA is the root mean square error of approximation. <sup>a</sup> Omitted category.

\* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

The initial value of financial self-reliance, at age 23, for each gender category in a particular group was be given by summing these effects:

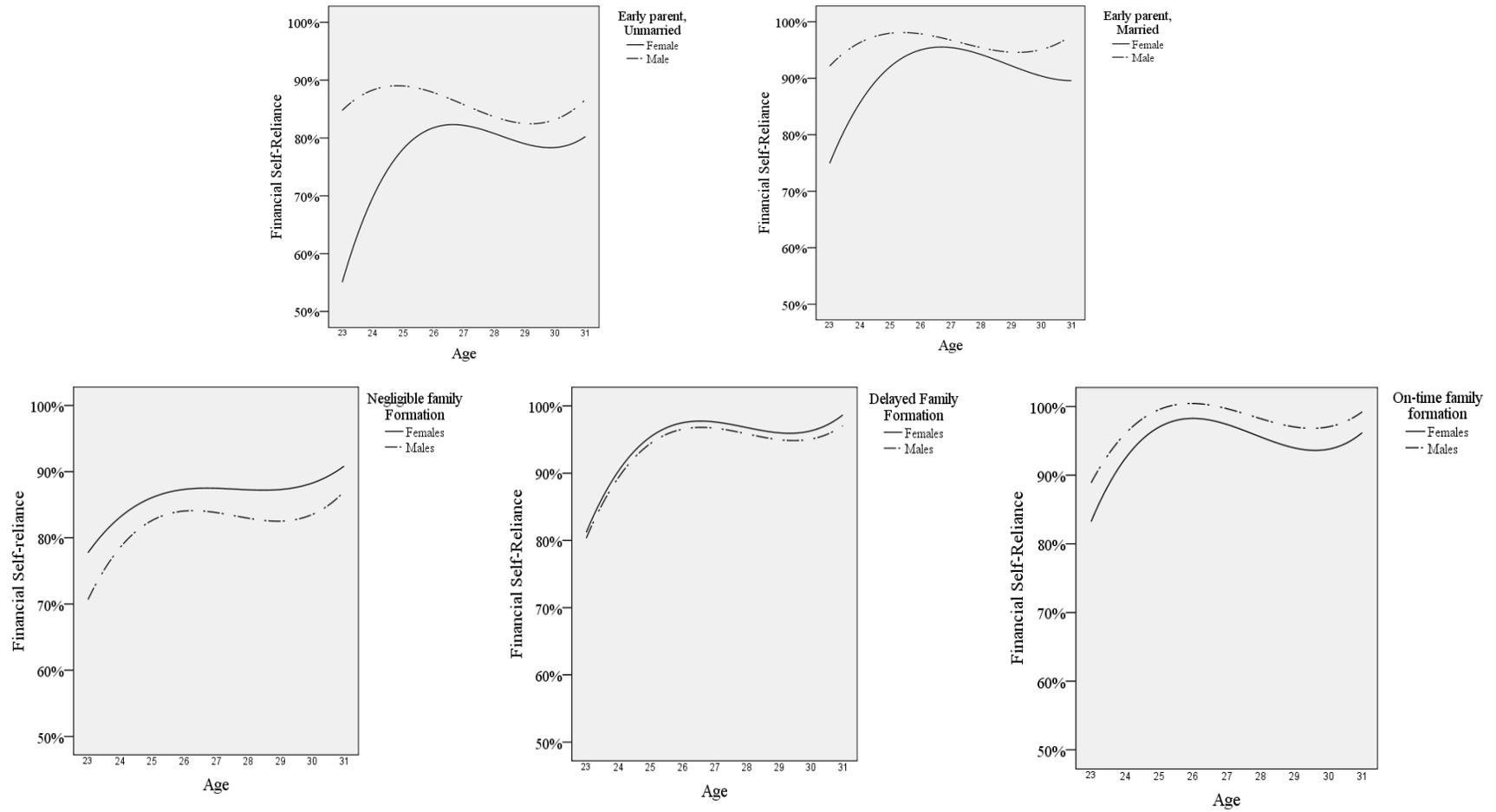
$$FSR_{\text{males}} = \text{constant} + \text{life path effect}$$

$$FSR_{\text{females}} = \text{constant} + \text{gender main effect} + \text{life path effect} + \text{interaction effect}$$

Using these formulas, the initial levels of financial self reliance for males and females in the early parent unmarried group were 85% and 55%; in the early parent married group were 92% and 75%; in the negligible family formation group were 71% and 78%; in the delayed family formation group were 80% and 80%; and in the on-time family formation group were 89% and 83% respectively. Similar formulas could be used to describe the effects on the slopes by including the effects of the linear, quadratic, and cubic slope parameters. However, these were easier to visualize by plotting the information over time (Figure 9).

Figure 9 shows the interaction effects of gender and the life paths on financial self-reliance. The upper graphs reveal the differences between males and females in the early parent groups, neither of which experienced orderly traditional school-to-work transitions. The initial levels of financial self-reliance for females who married were higher than for those who did not marry, but much lower than for males in these two groups. Financial self-reliance became more similar with the passage of time in those life path groups. The highest overall levels of financial self-reliance were for those in the delayed family formation and on-time family formation groups, with somewhat lower levels for males and females in the negligible family formation group. It was also interesting to note that the gender gap was (nominally) reversed in the negligible family formation group with higher levels of financial self-reliance for females than males. Gender equity was most apparent in the delayed family formation group.

Figure 9. Interactions of Gender and Life Paths on Financial Self-Reliance



Note: This graph is an illustration of estimates from Table 8.

## Economic Pressure Latent Growth Curves

The findings in this section were the result of parallel data analysis processes with those in the previous section, but with economic pressure as the outcome. Thus, the research questions addresses were RQ2b, RQ3b, RQ4b, and RQ5b. Although findings were fully explained in this section, fewer explanatory notes for the procedures were presented. Greater details describing the rationale for the steps in the analysis were given in the methods chapter and previous section on financial self-reliance.

*RQ2b: What type of trajectory best described change in economic pressure in early adulthood? Was there significant variation in individual patterns of change over time?* Examination of the correlations between the repeated measures of economic pressure, the overall sample means plotted over time, and the means expressed again within life path groups suggested a linear or slightly curvilinear pattern in economic pressure over time. Among several baseline models that were examined, the quadratic (curvilinear) pattern fit best. Significant variation was present in the intercept, linear slope, and quadratic slope components.

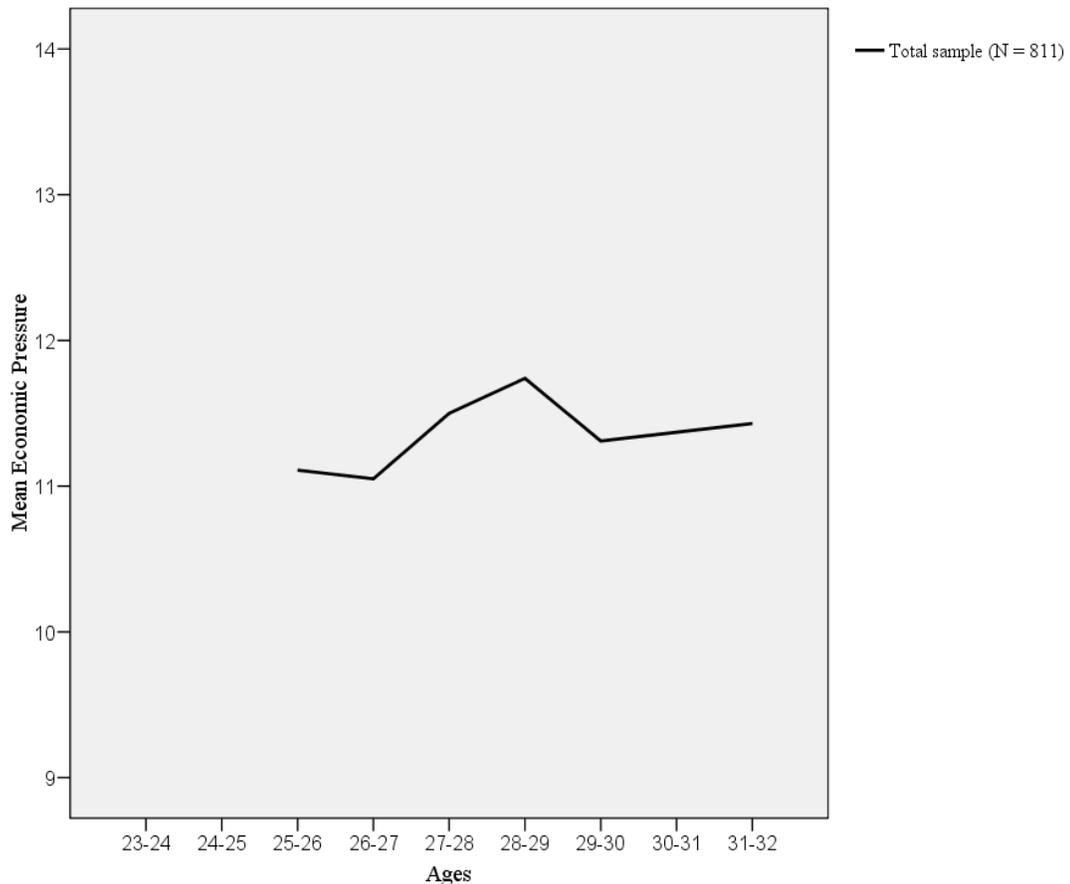
Table 9. Correlations between Observed Measures of Economic Pressure

Economic Pressure	1	2	3	4	5	6
1. Age 25						
2. Age 26	.66					
3. Age 27	--	--				
4. Age 28	.53	.59	--			
5. Age 29	.47	.56	--	.73		
6. Age 30	--	--	--	--	--	
7. Age 31	.42	.47	--	.58	.63	--

*Note:* (Ns range from 625-678). Hyphens (--) indicate waves when no data were collected.

Table 9 shows correlations of the repeated measures of economic pressure over time from age 25 to age 31. Correlations ranged from  $r=.42$  to  $r=.73$ . The findings revealed a typical decay pattern commonly associated with repeated measures. The variables with one-year time lags, located in the upper-most diagonal, generally had stronger relationships than those falling below this line, which represent associations across greater spans of time. The decay occurred monotonically across longer time lags, which was evident of a relatively uncomplicated change pattern.

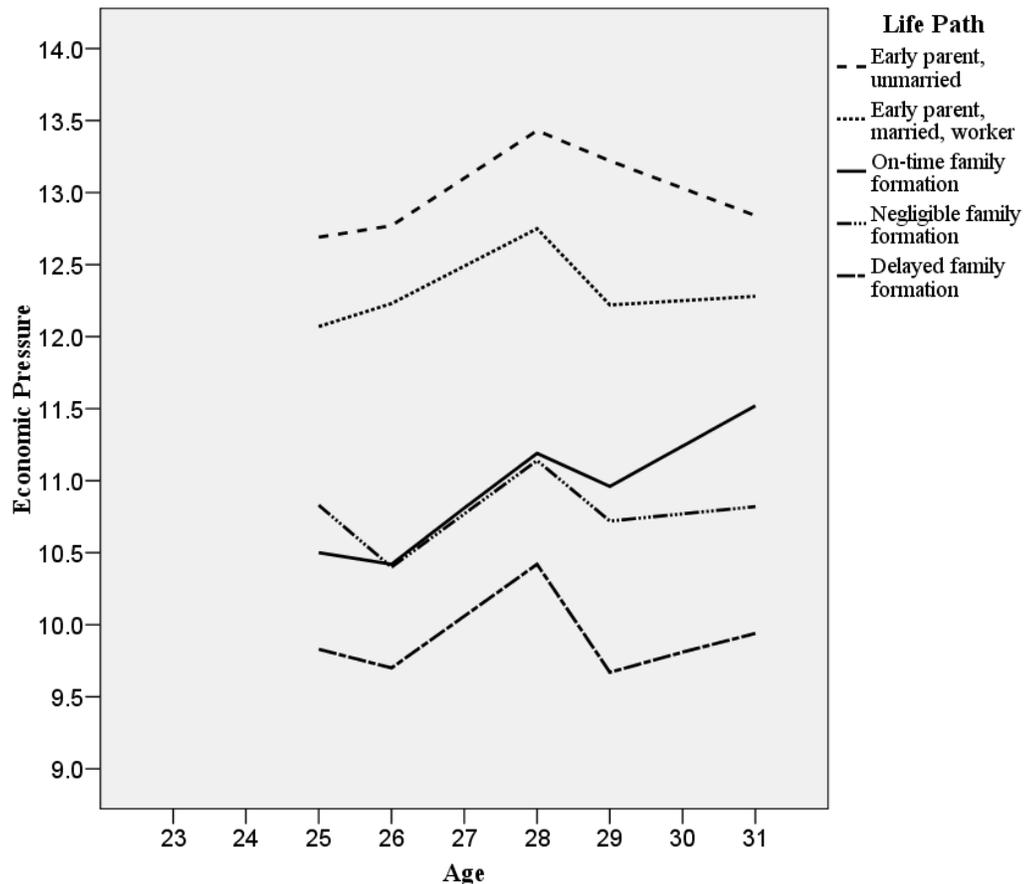
Figure 10. Observed Means of Economic Pressure



Note: (N=811). Means of immediately prior and later years are shown at ages 27 and 30.

Figure 10 is a plot of the mean values of economic pressure. The sample size was 811. Mean values from the immediately prior and subsequent years were substituted into the graph when there were gaps in measurement at ages 27 and 30. The average respondent score at age 25 was roughly 11 on a scale from 3 to 21, or a moderate amount of economic pressure. Over time, a gradual rise in economic pressure occurred with a spike in the observed values at age 28. This spike occurred in 2002. This graph, however, did not account for potential differences between life path subgroups in the sample.

Figure 11. Observed Means of Economic Pressure for Life Path Groups



Note: (N=732). Means of immediately prior and later are shown at ages 27 and 30.

Figure 11 contains plots of the mean scores of economic pressure for each of the life path subgroups in the sample. Several observations were readily apparent in this graph. Although similarities in the progression of economic pressure occurred for each of the groups, the most noticeable differences were in the initial levels of economic pressure. The highest initial mean was 12.69 for the early parent unmarried group, followed by the early parent married group with a mean of 12.07. These groups shared early parenthood in common. The only individuals whose observations clearly seemed to increase across the entire span were those in the on-time family formation group whose initial level of 10.50 rose to 11.52. All five groups, however, showed evidence of a spike in economic pressure in 2002 at age 28.

Table 10 reports the fit statistics of the baseline models tested for economic pressure. Four baseline models were tested. They included a level model, a linear change model, a quadratic model, and a cubic model. The level model and the linear model did not meet standards for an acceptable model because they had an RMSEA above .08. The remaining two models both had acceptable levels of fit, but based on fit alone, one was not clearly better than the other. The chi-square for the quadratic model was 31.6 ( $df=10$ ,  $p<.001$ ), and the other fit statistics were CFI=.987, TLI=.980, and RMSEA=.052.

Table 10. Fit Statistics for Baseline Latent Growth Curve Models of Economic Pressure

Model	$\chi^2$	$df$	$p$	CFI	TLI	RMSEA
Level	232.9	17	<.001	.867	.883	.125
Linear	97.8	14	<.001	.948	.945	.086
Quadratic	31.6	10	<.001	.987	.980	.052
Cubic	17.6	5	<.01	.992	.977	.056

*Note:* ( $N=811$ ). CFI is the comparative fit index, TLI is the Tucker-Lewis index, and RMSEA is the root mean square error of approximation.

These were compared to the fit statistics of the cubic model, whose chi-square was 17.6 ( $df=5, p<.01$ ) and other fit statistics were CFI=.992, TLI=.977, and RMSEA=.056. Two of the four fit statistics favored the quadratic model while the other two favored the cubic model. Given the more parsimonious quadratic model (fewer parameters to be estimated), it was selected as the baseline model (Marsh & Hau, 1996). This model fit a curvilinear line to the data with one bend in the line.

Table 11 shows key results of the baseline model, the means and variances of each latent variable. The mean intercept ( $m=11.01$ ) was the average level of economic pressure at the age of 25 (on a scale from 3 to 21). The positive linear slope ( $m=0.185$ ) and the negative quadratic slope ( $m=-0.020$ ) showed the slight rise and fall of economic pressure in the average trajectory. The mean of the intercept was significantly different from zero ( $p<.001$ ), but the means for the slope components were not significantly different from zero. However, around these averages, there was significant heterogeneity as shown by the variances. Significant variance was present in the intercept and both the linear and quadratic slope components ( $p<.001$ ).

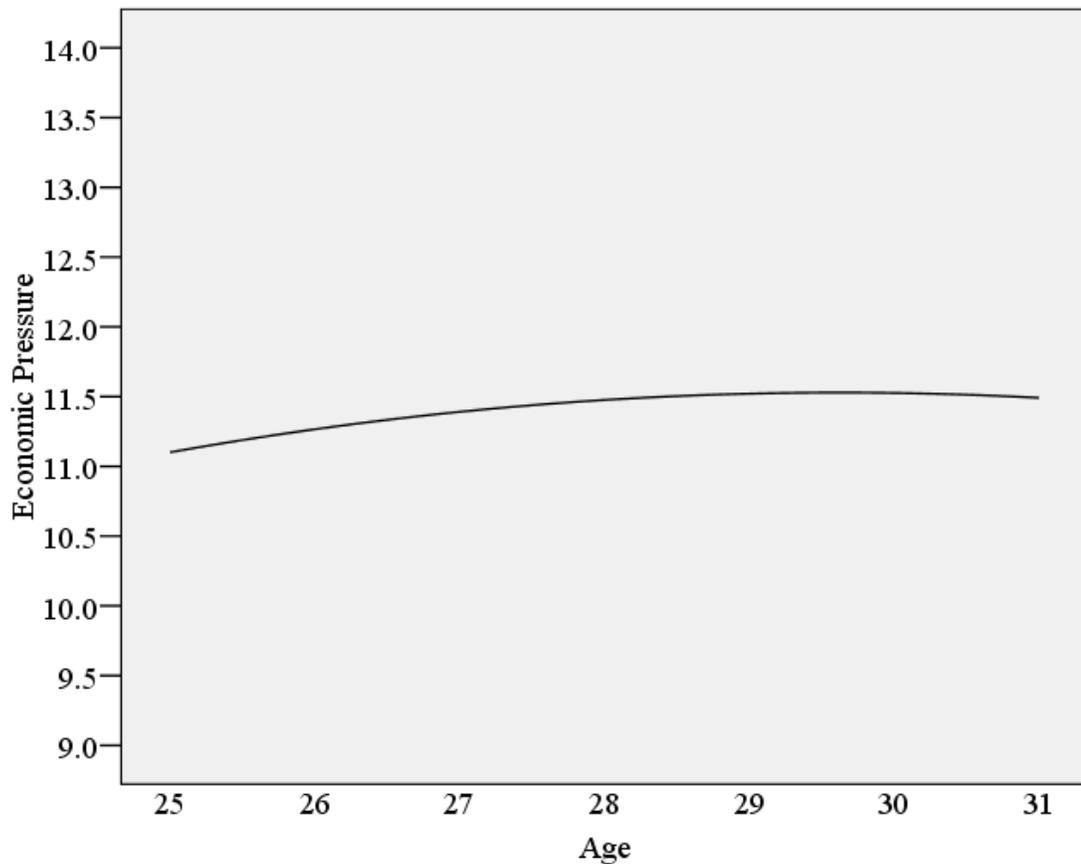
Table 11. Estimates for the Quadratic Baseline Growth Curve of Economic Pressure

Parameter	Mean	SE	Variance	SE
Intercept (age 25)	11.101***	.172	16.577***	1.196
Linear slope	.185	.098	2.839***	.408
Quadratic slope	-.020	.015	.056***	.010

Note: ( $N=811$ ). \* $p<.05$ , \*\*  $p<.01$ , \*\*\*  $p<.001$ .

Figure 12 is a plot of the estimated average change in economic pressure. Overall, the levels of economic pressure were fairly constant with only slight change over time. A small amount of growth was demonstrated from beginning to end with a very slight curvature, peaking at about age 29 or 30, although there was little change over time.

Figure 12. Estimated Baseline Growth Curve of Economic Pressure (N=811)



Note: (N=811). This graph is an illustration of means estimates from Table 11.

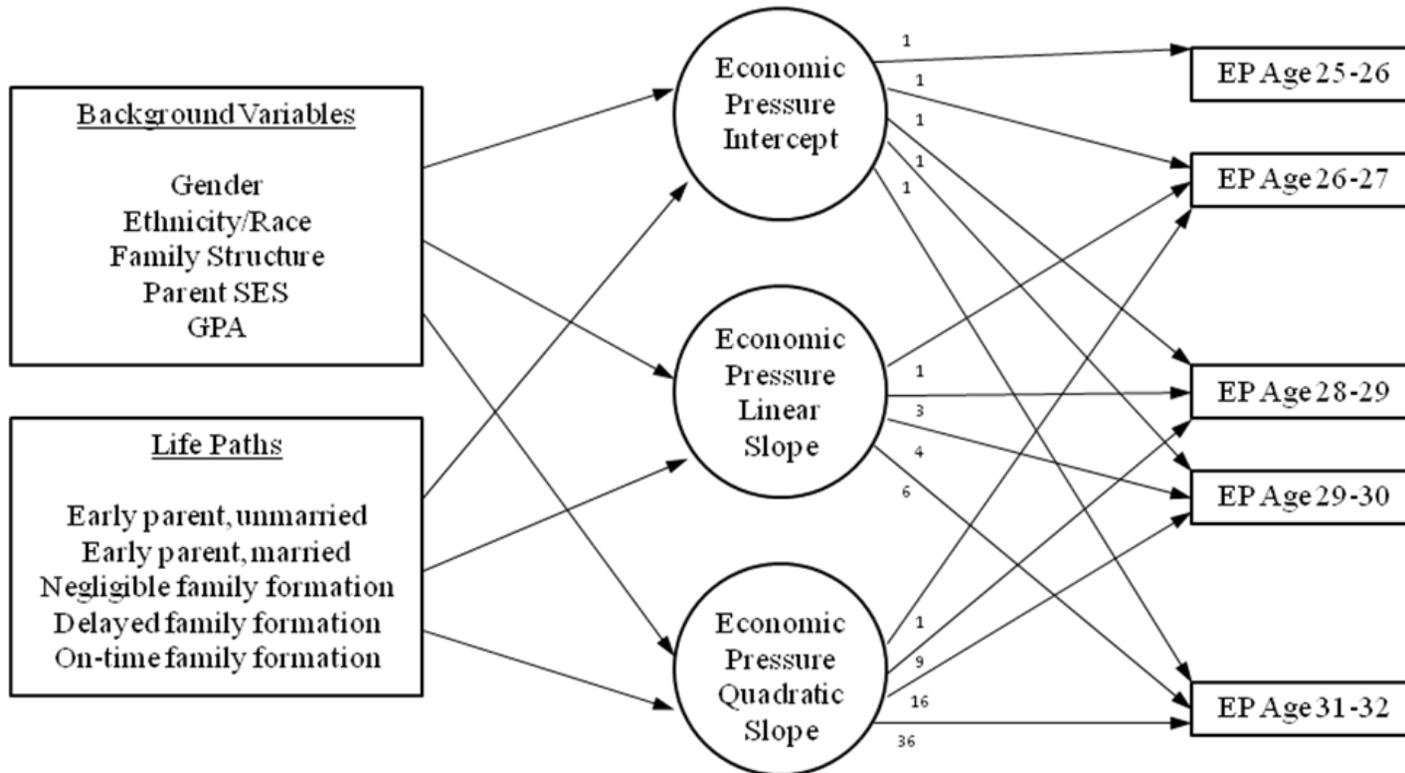
**RQ3b: Did background variables explain differences between individual trajectories of change in economic pressure in early adulthood?** After presenting a conceptual model with background variables as predictors, this section provided details

about how gender, ethnic/racial minority status, parental SES, and high school academic achievement impacted initial levels of economic pressure, and how living with a single parent relative to living in an intact two-parent family impacted change over time in economic pressure.

Figure 13 is a conceptual model of the predictors of change in economic pressure in early adulthood. The circles in the center represent three latent growth curve variables and their paths to the repeated measures of economic pressure on the right. These variables constituted the baseline model that was accepted previously. The variance in these latent variables was examined via the background variables and life path predictors on the left. The element of time for the repeated measures was captured in the scaling of the factor loadings (associated with each of the arrows from the latent variables to the repeated measures) which were represented by time and the function of the latent variable.

Loadings for the intercept were scaled as a constant. The scaling of the linear slope component was simply a direct count of time in years since the initial measurement at age 25. The scaling of the quadratic slope component was equivalent to time since the initial age squared (time to the second power). The scaling was adjusted for the years when no data were collected by counting over those years. The paths on the left side were the regression paths predicting differences in the trajectories between individuals in the sample using background variables and life paths as independent variables.

Figure 13. Conceptual Model of the Predictors of Change in Economic Pressure (EP) in Early Adulthood



The first model in Table 12 provides estimates of the effects of background variables on the trajectories of economic pressure. Model 1 had an acceptable fit with a chi-square of 88.65 ( $df=34, p<.001$ ), CFI=.97, TLI=.93, IFI=.97, and the RMSEA=.047. On average at age 25, females were 1.70 ( $b=0.849 \times 2, p<.001$ ) points higher than males on levels of economic pressure. Those who were part of an ethnic/racial minority group were, on average, about one point higher ( $b=1.08, p<.05$ ) on economic pressure. Each unit change in parental SES was associated with about a half point ( $b=-.547, p<.05$ ) average reduction in the initial level of economic pressure. Each full point difference in the individual's GPA was associated with less initial economic pressure ( $b=-.680, p<.01$ ).

Family structure made no difference in the initial levels of economic pressure. Living in a single parent family relative to living in an intact two-parent family, however, had a significant effect in change over time; there was a larger negative effect on the quadratic slope ( $b=-.089, p<.05$ ). The heightened quadratic effect of living in a single-parent family meant significantly more economic pressure in the center of the age-spectrum compared to those living in intact two-parent families at age 14. Individuals from single-parent may have been more vulnerable to the causes of economic pressure that led to its spike in 2002 when participants were 28 years old.

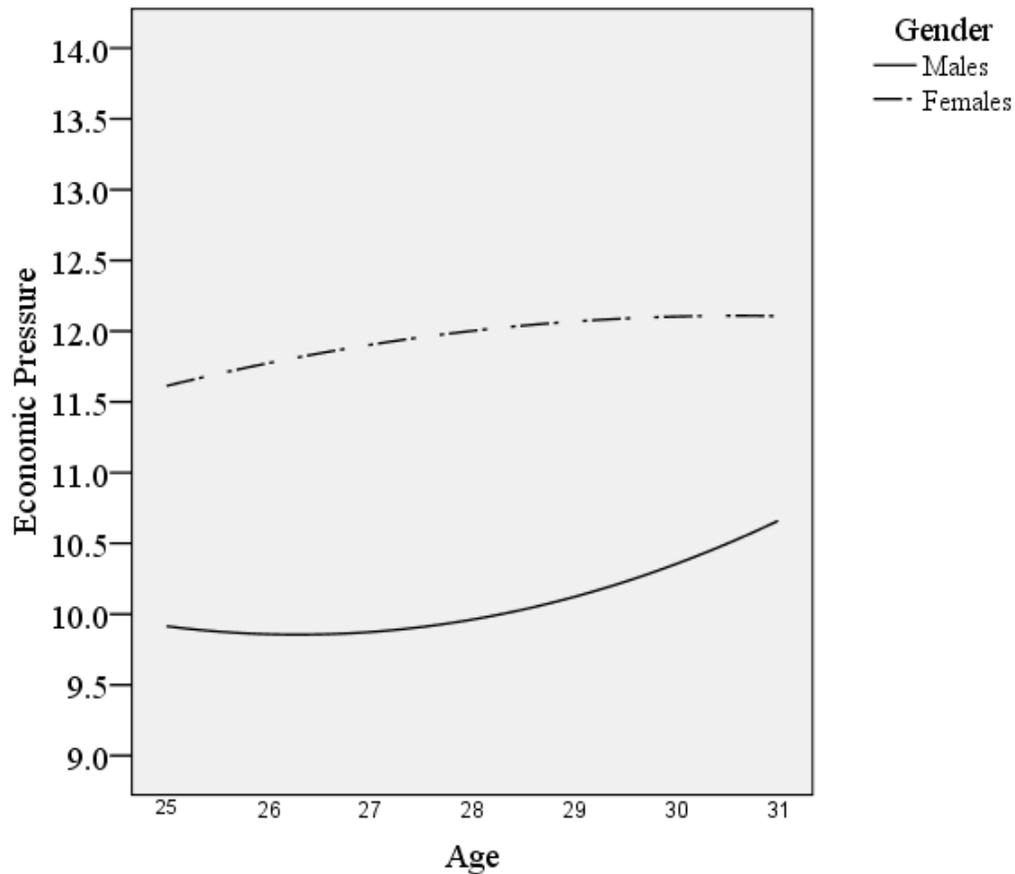
Figure 14 shows differences in economic pressure for males and females. The plots controlled for the mean effects of parent socioeconomic status, mean GPAs within each group, and assumed the values for White, non-Hispanics, and intact two-parent family structure. Initial levels of economic pressure shown in this graph were significantly different.

Table 12. Parameter Estimates for Latent Growth Curve Models of Economic Pressure

	Model 1			Model 2			Model 3				
	Intercept	Slope Components		Intercept	Slope Components		Intercept	Slope Components			
		Linear	Quadratic		Linear	Quadratic		Linear	Quadratic		
Constant	12.659***	.011	.013	12.549***	.414*	-.057	13.055***	.258	-.021		
<i>Background Variables</i>											
Gender <sup>a</sup>	.849***	.135	-.026				.765***	.119	-.025		
Ethnicity/race (1=minority)	1.083*	.151	-.030				.997*	.130	-.026		
<i>Family structure</i>											
Intact two-parent (omitted)	--	--	--				--	--	--		
Stepparent	.663	-.290	.025				.561	-.310	.026		
Single parent	-.361	.409	-.089*				-.354	.433	-.091*		
Other arrangement	-.500	.570	-.079				-.512	.537	-.074		
Parental SES	-.547*	.020	-.001				-.329	.045	-.004		
GPA	-.680**	.011	-.001				-.509	.009	.000		
<i>Life Path</i>											
Early parent unmarried (omitted)				--	--	--	--	--	--		
Early parent married				-.214	-.414	.060	-.063	-.376	.052		
Negligible family formation				-1.851***	-.353	.050	-.940	-.314	.035		
Delayed family formation				-2.674***	-.324	.044	-1.700**	-.277	.026		
On-time family formation				-2.077***	-.271	.065	-1.429**	-.222	.051		
<i>Model Fit</i>											
$\chi^2$ (df) p-value		88.65 (34) <.001				35.74 (18) <.01				103.40 (46) <.001	
CFI, TLI, IFI		.97, .93, .97				.99, .98, .99				.98, .93, .98	
RMSEA		.047				.037				.041	

Note: (N=732). <sup>a</sup>In these models, gender was coded (-1=male, 1=female) this made it easier to generate a male-female mean in later graphs of the trajectory when a “control” for gender was desired. CFI is the comparative fit index, TLI is the Tucker-Lewis index, and RMSEA is the root mean square error of approximation. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Figure 14. Change in Economic Pressure Associated with Gender



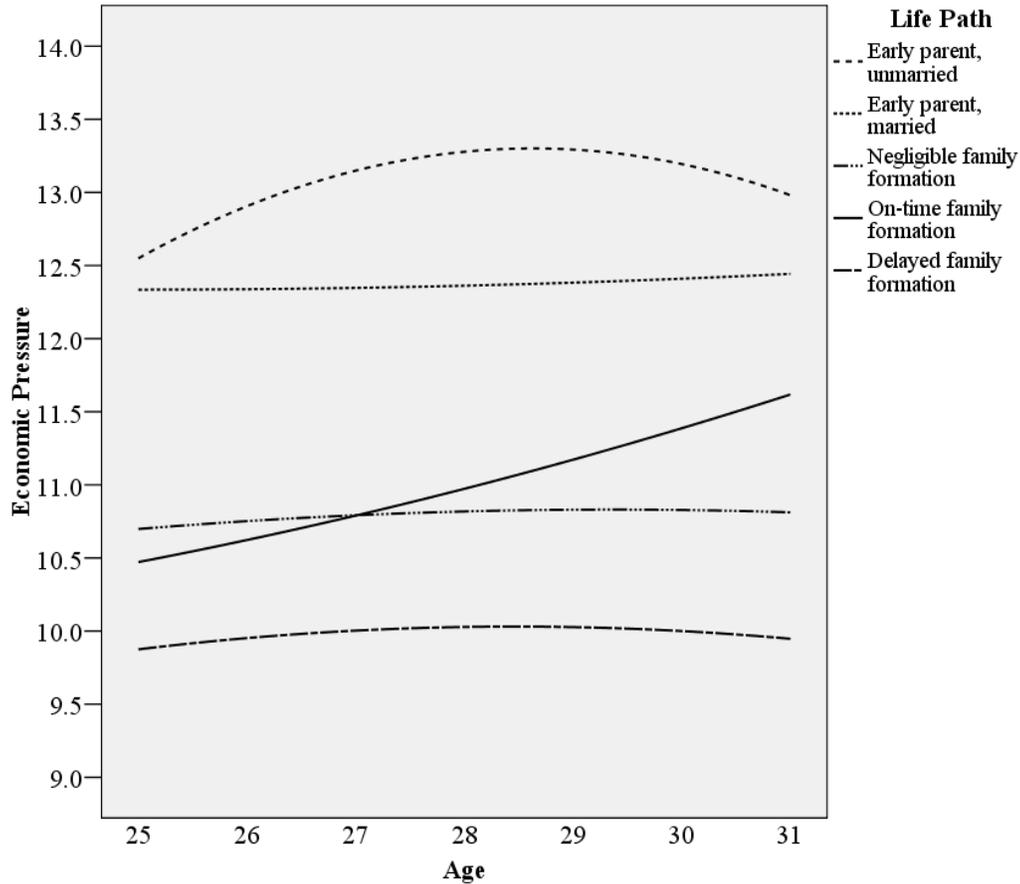
*Note:* ( $N=732$ ) Based on estimates from Table 12, Model 1. The graph controls for mean levels of parental SES, mean GPA within each group, and assume the modal values for family structure (intact two-parent) and ethnicity/race (non-minority).

Although it appeared that economic pressure for males increased over time relative to that of females which appeared to level off, the differences in these changes over time effects were not statistically significant.

The second model in Table 12 shows the associations of life paths with the trajectories of economic pressure. The model had an acceptable fit with a chi-square of 35.74 ( $df=18, p<.01$ ), CFI=.99, TLI=.98, IFI=.99, and the RMSEA=.037. The intercepts

for each of the groups experiencing traditional school-to-work transitions differed from the early parent unmarried reference group; all were significantly lower.

Figure 15. Change in Economic Pressure Associated with Life Paths



*Note:* Based on estimates from Table 12, Model 3. The graph controls for mean levels of parental SES, mean GPAs within each group, assume the modal values for family structure (intact two-parent family) and ethnicity/race (non-minority), and use the male-female mean values.

Figure 15 shows estimates for each life path group. Estimates were controlled for mean levels of parental SES, mean GPAs within each group, and assume the values for White, non-Hispanics, and intact two-parent family structure, and used the mean values

between males and females. The initial estimated levels of economic pressure were 12.55 for the early parent unmarried group, 12.34 for the early parent married group, 10.70 for the negligible family formation group, 9.88 for the delayed family formation group, and 10.38 for the on-time family formation group.

***RQ4b: Did the life paths discovered by Eliason et al. (2009) mediate the effects of background variables on trajectories of economic pressure?*** The third model in Table 12 examined whether the associations of background variables with economic pressure were mediated by life paths. This determination was made by comparing changes in coefficients across the two models (with and without the life paths) for changes in magnitude and significance. The effects of two background variables were reduced to nonsignificance with the introduction of life paths. Parent socioeconomic status no longer had a significant effect on economic pressure ( $b=-.329$ ,  $ns$ ) and GPA no longer had a significant effect ( $b=-.509$ ,  $ns$ ). These findings along with the findings from Table 3 (selection into life paths), suggested that the effects of parent socioeconomic status and student GPA on economic pressure was transmitted through the influence they had on selection into life paths.

***RQ5b: Did gender and the life paths interact in predicting economic pressure trajectories?*** Estimates in Table 13 revealed no interaction effects of gender with life paths to explain economic pressure. Gender had main effects on the intercept of economic pressure ( $b=2.02$ ,  $p<.05$ ), but none of the interaction variables were significantly related. Curiously, the main effects of life paths were also non-significant except for the association of the delayed family formation group relative to the early

parent unmarried group which experienced a lower initial level of economic pressure ( $b = -1.775, p < .05$ ).

Table 13. Gender Interactions with Life Paths Predicting Latent Growth Curves of Economic Pressure

	Model 1		
	Intercept	Slope Components	
		Linear	Quadratic
Constant	11.117***	.067	-.020
<i>Background variables</i>			
Gender (1=female)	2.021*	.539	-.060
<i>Life Path</i>			
G1. Early parent unmarried (omitted)	--	--	--
G2. Early parent married	.046	-.324	.047
G3. Negligible family formation	-1.049	-.153	.052
G4. Delayed family formation	-1.775*	.252	-.019
G5. On-time family formation	-1.329	-.010	.058
<i>Interactions</i>			
Gender X G1 (omitted)	--	--	--
Gender X G2 early parent married	-.171	-.056	.008
Gender X G3 negligible	-.798	-.173	-.031
Gender X G4 delayed	-1.066	-.896	.096
Gender X G5 on-time	-1.006	-.349	.004
<i>Model Fit</i>			
$\chi^2$ (df) p-value		44.355 (28) .026	
CFI, TLI, IFI		.99, .99, .99	
RMSEA		.028	

Note: (N=732). \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

## Correlation of Latent Growth Curves

**RQ6: Were the financial self-reliance and economic pressure trajectories associated with one another?** To see whether the changes in financial self-reliance and economic pressure were related, both baseline models were estimated together with the latent intercepts and slope components correlated. Significant correlations between constructs indicated whether initial levels of financial self-reliance were related to initial levels of economic pressure or the ways in which economic pressure changed over time. Likewise, it was possible to examine whether initial levels of economic pressure were

related to initial levels of economic pressure or the ways in which economic pressure changed over time.

Table 14. Correlation of Latent Intercepts and Slope Components between Financial Self-Reliance and Economic Pressure.

Economic Pressure	Financial Self-Reliance			
	Intercept (age 25)	Slope Components		
		Linear	Quadratic	Cubic
Intercept (age 23)	-.10	.07	-.07	.06
<i>Slope Components</i>				
Linear slope	-.12	.11	-.15	.16
Quadratic Slope	.12	-.11	.15	-.17
<i>Model fit</i>				
$\chi^2$ (df) p-value		246.82 (67) .000		
CFI, TLI, IFI		.95, .93, .95		
RMSEA		.061		

Note: N=732. All correlations were non-significant,  $p > .05$ .

The results of these correlations tests are shown in Table 14. The model had an acceptable fit with a chi-square of 246.82 ( $df=67$ ,  $p < .001$ ), CFI=.95, TLI=.93, IFI=.95, and the RMSEA=.061. The correlations between the models ranged from -.07 to .16 and were all nonsignificant. These findings suggested little or no relationship between the growth curves parameters.

### Summary of Findings

This chapter provided answers to the six research questions. First, among the background variables, gender, ethnic/racial minority status, and socioeconomic variables were important predictors of the selection into life paths, whereas family structure made no discernable difference. Second, the findings addressed trajectories of financial self-reliance and economic pressure. Overall, financial self-reliance increased rapidly up to

age 26, followed by a modest decline before it rose again by age 31 to a level of about 90%. Overall, economic pressure was at a moderate level initially with very little change over time. Third, background variables predicting the trajectories mainly influenced initial levels, the effects of which were often perpetuated over time. Gender was a particularly salient predictor of both outcomes. GPA was important as a predictor of change in financial self-reliance over time. Ethnic/racial minority status made a difference in levels of economic pressure. Fourth, the effects of parental SES and the individual's GPA on economic pressure were transmitted through selecting into life paths. Fifth, there were important implications of gender within the early parenthood life path groups regarding financial self-reliance; females were less self-reliant at an early age in those groups. Economic pressure trajectories were not influenced by any gender by life path interaction effects. Finally, the trajectories of financial self-reliance and economic pressure were not correlated.

## **Chapter V: Discussion**

Findings of this study paint a picture of economic experience in early adulthood that is as complex and varied as the life paths that young people in the 1990s followed into adulthood. Because young people rate financial self-reliance as a developmental milestone in the transition to adulthood (Arnett, 1998; 2001) and because societal conditions concentrate risks of economic pressure in early adulthood (Drentea, 2000; Mirowsky & Ross, 1999a), these constructs were investigated across a stretch of time that bridged the movement of individuals from family-of-origin to family-of-destination. Yet, unlike the numerous existing studies that have polled young people about the importance they ascribe to becoming financially independent, this is among the first that actually tracks young adult progress in this domain. Furthermore, the study considers early life course features that serve as long-range predictors of economic pressure, rather than beginning with economic pressure as an exogenous variable. The result is not only a description of the dynamic changes in financial self-reliance and economic pressure occurring over time, but an intensive investigation of the ways that ascribed and achieved elements of an individual's background constrain, combine, and condition the effects of individual life paths on the economic experiences participants experienced as they moved into adulthood.

### **Freedom and Constraint in Life Path Selection**

This study showed that the personal and social selection processes that are at play in distinguishing the life paths that young people followed into adulthood are influenced

by the person's childhood background. Females are less likely to delay or have negligible family formation, meaning they were more likely to marry or have children in their 20s. Ethnic and racial minorities are less likely to have on-time and negligible family formation.

Family structure, meaning the marital status of parents when age 14-15, likely plays a role in influencing selection into life paths through its effect on boosting socioeconomic status among parents and the youth's own academic achievement. More research, however, is needed to confirm this conclusion. The findings indicate that parental income and education and the participant's own academic achievement pushed the young adult toward life paths that included school-to-work transitions and later life family formation.

These findings fit well with sociological and family research that argues for social reproduction of socioeconomic status via parent-to-child investments in education (McLanahan & Percheski, 2008). Those with higher grade point averages in high school more often move into life paths where post-secondary education culminates into steady full-time work. These findings also fit well with the life course perspective on transitions to adulthood which emphasize how the linked lives of parents and children are a mechanism for transmitting the social realities of historical periods (Elder, Johnson, & Crosnoe, 2004). For instance, the record rates of post-secondary college enrollment observed in this cohort of young people were based, at least partially, on the socioeconomic levels attained by their parents.

What about the emerging adulthood perspective? From Arnett's (2004) point of view, the expanded interval in early adulthood between residing in the family-of-origin and the family-of-destination gives young people the opportunity to break from the social inequalities of the past and forge new directions in life. In this study, the combined role of gender, ethnic/racial minority status, family structure, parental SES, and GPA only accounted for 18% of the variance in the selection of life paths. Furthermore, background variables, including gender, ethnic/racial minority status, family structure, parent SES, and GPA, did not significantly distinguish the early parenthood groups from each other.

Thus, individuals who became parents at an early age may not have differed much in the social pressures that led some to marry and begin steady full-time work versus the early parents who did not marry or have much work engagement. Marriage and work typically are resource generating roles which could help explain why the early parents who engaged in these roles had higher levels of financial self-reliance. Nevertheless, both early parenthood groups perceived similar levels of economic pressure. Likewise, socioeconomic variables, including gender, ethnic/racial minority status, family structure, parent SES, and GPA, did not distinguish among the groups that underwent a traditional school-to-work transition. These groups (negligible, delayed, & on-time) differed in the timing of family formation in the late 20s. Among these three groups, however, females more often formed families they considered on-time, whereas ethnic/racial minorities more often delayed family formation.

Females are more likely to be in the on-time family formation group versus the delayed and negligible family formation group and there are two potential reasons for this

gender difference. Females may have married men who were slightly older. When there are age differences, timing and perceptions of timeliness can differ for each individual. Age differentials in marital unions could help explain why females were more likely to be in the on-time family formation group versus other paths with later family formation. Older males who felt they had delayed marriage or parenthood could have been married to younger women who rated their marriages as on-time. This raises interesting questions that need to be addressed with other data sources, since the YDS does not track the perceptions of spouses.

Several conclusions can be drawn from these findings. Background variables and the timing of transition events clearly matter because they are interrelated; however, they provide an incomplete picture of what draws individuals into particular life paths.

Further, integration of the life course and emerging adulthood perspectives regarding transitions to adulthood could advance future research on early adulthood. Those who study markers of transitions could further consider the personal meanings, attitudes, and expectations that have interested emerging adulthood researchers. Likewise, emerging adulthood researchers could consider a wider diversity of life paths, especially for young people of low socioeconomic status and those without a college experience. They could also attend to conditions in childhood that are associated with the early adult life course.

### **The Course of Financial Self-Reliance and Economic Pressure in Early Adulthood**

*Financial self-reliance.* This study is unique for having first investigated trajectories of financial self-reliance and economic pressure in early adulthood. For the sample as a whole, levels of financial self-reliance were already quite high by age 23,

averaging about 76%. By age 26, however, that average had increased close to 90%. After age 26, the average levels of financial self-reliance fell slightly before rising to a comparable ceiling again at about 90% by age 31. Sharp rises in financial self-reliance from age 23-26 could easily be attributed to the tail end of a normative pattern of becoming financially self-reliant begun at an earlier age. These data did not provide information about the age at which participants initially began to develop financial self-reliance. Further research should consider the development of financial self-reliance from the point at which there is full dependence on parents for financial support. Information in the life paths leads to the conclusion that future studies might begin measurement by at least age 17 and perhaps earlier. This is based on the fact that, at age 17, all life path groups were similar in their role configurations, with high likelihoods of living at home with parents, being enrolled in school, and having low likelihoods of involvement in adult roles except for a small minority who became parents at this early age. This role configuration seen among all the groups at age 17 is probably associated with very low levels of financial self-reliance.

The temporary declines in levels of financial self-reliance from roughly ages 26-30 is intriguing and invites more speculation regarding causes. First, young people might manage their resources in a way that promotes short-term financial self-reliance at a later cost. In this study, for instance, student loans are counted as part of financial self-reliance. Ages 23 to 26 are education-intensive years for those obtaining degrees. Upon graduation from higher education, student loans that were once a source of income turn

into expenses that may hinder the young adult in maintaining earlier levels of financial self-reliance.

Also at these ages, other possible contributing factors to the declines in financial self-reliance might include paying back consumer debt and being dropped from parents' health and auto insurance plans. Young adults who begin filing their own taxes and who have more interaction with government agencies might become aware of government assistance programs for which they are qualified for participation. Parent financial supports, such as supplementing the low wages of entry-level jobs, home buying assistance, and recovery from early relationships crises, would also have contributed to lower levels of financial self-reliance (Swartz et al., in review) and could have been concentrated in these years. Whatever the causes, it appears that the financial exigencies of adult life came to bear in the late 20s and temporarily outpaced most individual's capacity to continuously maintain a high level of financial self-reliance throughout one's 20s.

It might also be fruitful to examine how accurate young adults of different ages are at reporting sources of support. While in school or living close to home with a child, young adults may not accurately perceive the number of parental supports they receive and over-report levels of financial self-reliance. It may be difficult to account for the value of meals from home, borrowed vehicles, and the free childcare of grandparents until these benefits must be paid for in the marketplace.

It was important to question why higher academic achievers experience an up-down-up again pattern of financial self-reliance, whereas lower academic achievers

experience only small incremental gains over time beginning at much lower levels. High academic achievement places individuals in life paths that include more college enrollment. College enrollment could have corresponded with higher levels of self-reliance during a time that college students are living on personal savings, scholarships, and student loans.

Ironically, individuals from higher SES families and who had better personal financial prospects may have felt more comfortable taking on large financial obligations, such as student loans, credit card debt, automobiles, mortgages, and other big-ticket items. Payment plans for these types of products can be adjustable, deferred, or managed through credit agreements, sometimes for years. Thus, the dynamic patterns in financial self-reliance seen among high academic achievers may partly be due to temporary college and consumer lifestyles. In other words, higher academic achievers may have mortgaged their early career earnings to support an initial period of greater financial self-reliance. Parents and government assistance plans may also have helped in the transition out of school and in the formation of a new family in the late 20s.

***Economic pressure.*** The trajectory of financial self-reliance is nothing like the trajectory for economic pressure. The average person in this study reported an initial “moderate” amount of economic pressure continuing to age 31. This finding is consistent with studies showing similarities in economic pressure for those under 30 and those ages 30-39 (Drentea, 2000; Mirowsky & Ross, 1999a). By age 25, most of the transitions that took place in the life paths had already occurred; thus, it was not surprising that levels of economic pressure remained virtually the same across this trajectory.

Images of a stable level of economic pressure resulted in some interesting questions about how individuals respond to economic pressure over a number of years. Keep in mind that economic pressure was a dependent variable in this study and its association with the life paths was contiguous because they were overlapping measures. Yet, why wouldn't some life paths, especially those that seem most economically challenging or facile correspond with rapidly increasing or decreasing levels of economic pressure? Is it possible that individuals, by force of habit or circumstance, compensate to the level of economic pressure they have been accustomed to by changing their expectations or standards of living? For instance, comparatively advantaged individuals who are in a position to reduce the burdens and stress associated with paying bills may simply take on more financial burdens as their income allows. Likewise, the comparatively less advantaged may find increasing economic pressures intolerable and downgrade their housing or quality of consumption to amounts they can manage monetarily and psychologically. Thus, it seems that it could be profitable to combine longitudinal studies of economic pressure with details about changes in income, assets, expectations, standards of living, and family needs. These could interact in important ways with the life paths of individuals in the transition to adulthood.

The trajectories obscured one of the interesting discoveries about economic pressure that was revealed in the raw mean scores examined over time. A spike in the observed means of economic pressure was observed in 2002 when respondents were age 28. This is an intriguing finding given historical events surrounding this year. In the early 2000s, a stock market crash occurred in the information technology sector, bursting the

“dot-com bubble” (Lowenstein, 2004). This was a sector of the economy that young adults were keenly aware of because at that time young people popularized internet technology. This was a recessionary period that increased unemployment rates, particularly for young people. In addition, the terrorist events of September 11, 2001 added to financial difficulty and generally led to perceptions of a troubled economy in America.

These events could have impacted the sample study participants’ levels of economic pressure reported in 2002. In economic crises, young adults may have had fewer opportunities to build assets whereas their older counterparts have already started asset accumulation and may have difficulties holding onto their assets. Early adulthood is also a formative age for economic awareness and these events could have influenced perceptions of economic pressure even if individual incomes were not significantly impacted. It would be interesting to compare this spike in the YDS data with other studies investigating economic pressure during the same time period.

### **Uniqueness of Economic Experience in Early Adulthood Life Paths**

As noted in the previous section, the trajectories of financial self-reliance and economic pressure are very different in their temporal patterns. This study finds that the constructs were not correlated even though the sample size in this study was large and had adequate power to detect small-to-moderate correlations. Thus, it is proposed that financial self-reliance and economic pressure be considered entirely unique dimensions of economic experience in early adulthood. Yet both, in their own unique ways, are

related to the life paths and background of the individuals participating in the study, and thus both are important descriptors of early adult economic experience.

For these reasons it is important to consider how particular *combinations* of financial self-reliance and economic pressure may impact the social-psychological meaning of one another. Among other things, this calls for more qualitative studies that are informed by research on life paths. Many of the qualitative studies in the emerging adulthood literature provide rich descriptions of the everyday financial realities that individual's face, but without a systematic consideration of the life paths that the interviewees were following. A person's view of economic pressure, like any other subjective measure, is likely to be scaled by the individual to his/her own individual experience. What is considered a "moderate" amount of economic pressure to economically advantaged individuals could have different repercussions compared to a "moderate" amount of economic pressure for others in dire economic conditions. Thus, it is instructive to consider both subjective and objective measures within a measured domain. In this study, financial self-reliance was a more objective measure than economic pressure.

***Early parent unmarried.*** It was, perhaps, not surprising that participants faced with the greatest difficulties in becoming financially self-reliant and experiencing the most economic pressure were those who became parents at an early age and did not engage in many resource generating roles during their 20s. Early parenthood, coupled with having no marriage partner, has been shown to lead to frequent family-to-work disruptions (Ammons & Kelly, 2008; Johnson et al., 2001) and poor career development.

In this study, meeting everyday financial needs was likely to be achieved through a patchwork of financial supports including unsteady or part-time employment, receipt of government assistance, and reliance on parents. Edin and Lein (1996) reported similar patterns of self-support among low-skill single mothers in several U.S. cities. Unlike several of the other groups whose likelihoods of living at home with parents became very low by age 25, the likelihood for this group was nearly constant, at about 40%, between age 19 and age 30. Thus, individuals in this group had relatively high levels of residential dependency, as well as low-levels of financial self-reliance, and high economic pressure. These difficulties were compounded by difficulties moving into resource generating roles in adulthood.

*Early parent married.* The childhood background variables in this study did not distinguish between the early parent married group and the early parents who remained unmarried and had minimal work engagement. These two groups experienced very different levels of financial self-reliance, but similar amounts of economic pressure. Marriage and full-time work are resource generating roles, especially when spouses provide additional income. However, given the apparent economically pressured context of early parenthood it was questionable whether marriage and work roles, in this context, were as economically empowering as they were when they were postponed until later in the life course, especially following orderly school-to-work transitions. The early parent married group experienced high financial self-reliance and high economic pressure; for them, marriage and work might simply be providing only the basic essentials.

Nevertheless, other possible contributing factors that were not measured in this study including personality, family and peer social support for marriage, relationship quality, and work opportunities might help to distinguish those early parents who go on to marry and enter stable full-time work from those early parents who do not engage in these roles. If this is the case, it could still be true that the life path is more a marker of childhood resources and relational competencies than a causal factor in developing financial self-reliance.

Another possibility given the comparatively high rates of financial self-reliance in this pressured group is that financial self-reliance has a two-fold meaning. In more stress-free contexts, financial self-reliance is likely to be evidence of healthy socioeconomic development and success, whereas in this group it could mean that having a child and being married meant that their parents stopped extending financial support (Swartz et al, in review). Parents could have taken the view that once a child is married and a parent, they should live more independently (Aquilino, 1991). Nelson et al. (2007), reported that mothers and fathers of college students aged 18-25 ranked “accept responsibility for the consequences of your actions” highest as a criterion necessary for adulthood. Financial self-reliance could be viewed by parents as an essential responsibility of marriage and parenthood.

***Negligible family formation.*** Many of the questions about whether or not early adulthood represents a period of floundering might adequately be addressed in the negligible family formation group. Consistent with Staff’s (2007) study, this group retained many of the characteristics of emerging adulthood such as delayed marriage,

living with parents, and cohabiting which were associated with lower wage earnings compared to those who had entered more permanent adult roles at the same ages. Arnett (2004) reported high ideals among young people for becoming independent of their parents and eventual family formation. Assuming that these ideals were also high amongst the negligible family formation, the fact that these transitions came later or were less often achieved may be a sign of difficulty. This is particularly so when these individuals' backgrounds seemed promising. These ideals, of course, were not measured in this study but Eliason et al. (2009) reported that this group felt "late" or "very late" in becoming financially independent of parents, living with a partner, marriage, parenthood, and owning a home. Furthermore, these respondents indicated that they did "not entirely" feel like adults (and they were similar to the delayed family formation group in this way). It is premature, however, to state conclusively that this group was floundering. Thus, future research with life path variables should continue to address expectations, values, and attitudes about transitions to adulthood similar to the Eliason et al.

Those in the negligible family formation group had parents with the second highest levels of SES, had GPAs that were similar to the on-time and delayed family formation groups, and were more likely to be White males than in other life path groups. This group also lacked the demands of early parenthood, went through school-to-work transitions at about the same age as other groups, and had the second highest levels of financial self-reliance. Past age 25, they were more likely to live at home with parents which was similar to the early parent unmarried group.

For this group, financial self-reliance did not appear to be driven downward by the economic demands of parenthood, but was more in line with marital status. The finding for this group regarding economic pressure challenges the logic of self-reliance being only needs driven. If family formation was the only determinant, this group which did not engage in marriage and parenthood would be expected to have the lowest levels of economic pressure. This is especially so with their comparatively high probabilities of living with parents and receiving parent and government assistance (Appendix H), however, this was not the case.

It seems likely that something significant and unidentified in the lives of these individuals was not detected. Additional investigation needs to take into account whether these individuals have been pursuing family formation, but have been unsuccessful or whether they were simply uninterested in family formation throughout their 20s. The financial lives of these individuals may tell an important story. They could have made decisions in college that left them bogged down in student debt, with a degree that did not lead to gainful employment or with no degree at all. They may have a higher standard of living that contributed to perceptions of economic pressure and an unwillingness to move away from parental contributions that support their higher SES lifestyle. In short, they may be living a life that is on hold, or as Arnett suggested was stuck somewhere “in between” adolescence and adulthood (2000a).

***Delayed family formation.*** Unlike any of the previous groups, those in the delayed family formation group appear to have the best possible combination of financial self reliance and economic pressure. That is, they have among the highest levels of

financial self-reliance and the lowest levels of economic pressure. This group is associated with increasing likelihoods of school-to-work transition at age 23, followed by marriage between ages 24-27, and parenthood several years later. This life course pattern begins with the accumulation of resource generating roles at about the same time as the individual moves away from parents, followed by the prosocial conditions of marriage and parenthood. By age 31, they were highly financially self-reliant. It seems as though they would not experience much increase in economic pressure. Given all the information in this study, this life path may be the most ideal and the findings support others who show economic benefits from delayed family formation (Mirowsky, 2002; Mirowsky & Ross, 2002).

*On-time family formation.* This group is very similar in the occurrence and ordering of life course transitions to the previous group, but the transitions came in more rapid succession. The increasing likelihood of a school-to-work transition followed by marriage and parenthood occurred simultaneously between the ages of 21-25. This group had comparatively high levels of financial self-reliance and low levels of economic pressure.

Graphs of economic pressure for this groups shows something interesting about this group that is not quite as pronounced in the other groups (although not significantly so). This group may experience economic pressure increasing at a greater pace than other groups. Further tracking of this phenomenon is needed to verify whether the change persists further into adulthood. At the age of 31, the rates of economic pressure are not yet at the levels experienced by the early parenthood groups, but they looked as though

they might be headed toward convergence. In the years to come, the levels of economic pressure in this group may rival the experiences of the early parenthood groups.

The findings with regard to each of the life paths have highlighted the possibility for different meanings of financial self-reliance and economic pressure in different contexts. For instance, why should we not expect similar levels of economic pressure from individuals who have a full array of adult responsibilities and a heavy, albeit, engaging workload that barely meets those demands versus an individual who is disengaged, uninvolved, and unrewarded by a similar combination of adult roles. Financial self-reliance could be just one indicator that helps tell the story of life course differences. This suggests the possibility of a vast underexplored social-psychological terrain that takes into account individual aspirations, standards of living, goal-directedness, and a complex web of social relationships that help determine financial realities that can only be speculated about in this study.

### **Life Paths as Mediators of Childhood Background Effects on Financial Outcomes**

One question that is of central interest to life course scholars is whether different pathways through life constitute harmless idiosyncrasies or whether they bear consequential effects on outcomes related to personal and family well-being. In this study, a question was posed regarding whether the effects of background variables on the financial outcomes were transmitted via the life paths that individuals followed. In other words, did the effects of gender, ethnic/racial minority status, parental SES, and participant's academic achievement make a difference in financial self-reliance and

economic pressure *because* they moved individuals toward life paths that resulted in differences in these variables, or were life paths themselves less relevant?

Answering this question involved a two-step process. In the first step, it was revealed that only some of these background variables predicted the outcomes. Setting gender aside, consider the effects of background variables on financial self-reliance. Ethnic/racial minorities were 6.4 percentage points lower in financial self-reliance at age 23 than the White, non-Hispanic majority. The effects of ethnic/racial minority status on financial self-reliance were mediated by the life paths, but the effect was small. Thus, having an ethnic/racial minority status decreases one's initial levels of economic pressure, and had a minor influence in moving individuals toward both early parenthood and the delayed family formation life paths. For the most part, this variable was used as a control because there were insufficient numbers in minority groups to allow for ethnic/minority comparisons. Compared with individuals from intact two-parent families, those from stepparent homes were 7.3 percentage points higher in financial self-reliance at age 23. Previous research has shown that children from stepparent families leave home earlier in life (Cooney & Mortimer, 1999; Tang, 1997) and this study shows that they are more financially self-reliant, although the effect was not mediated by the life paths. This suggests that individuals leaving stepparent homes are not likely to be headed to particular destinations, such as to school or marriage as this would have located them in particular life paths. It is more likely that they are viewing the transition primarily as being pushed or pushing away themselves from the family-of-origin rather than setting their sights on particular exit destinations.

Compare this with findings for economic pressure, being female and in the ethnic/racial minority is associated with significant increases in initial levels of economic pressure. Coming from a single parent family is associated with a growth pattern showing higher levels of economic pressure at the center of the trajectory. As previously discussed, the spikes in economic pressure at age 28 were larger for individuals from single parent families. If the spike is due to changes in the economy, single parent households may be overly exposed to economic hardship which would naturally be the case if there were job losses without other employed adults to lean upon to meet financial needs. The effects of all these variables were not mediated by the life paths.

### **Gender Differences in Early Adult Economic Experience**

Gender had pervasive effects on both financial outcomes. Compared to males, females experience less financial self-reliance and greater economic pressure at every age. In addition, females are more likely than males to be part of the early parenthood life paths. Within these paths, gender also continues to have additive effects on the outcomes, even when life paths are included as predictors. These findings underscore other well-known gender disparities in who cares for children, motherhood wage penalties, and unequal divisions of domestic housework which could contribute to differences in economic experiences in early adulthood. Among married couples, it would also be interesting to learn who manages the household finances because exposure to routine tasks of budgeting and bill-paying could heighten an individual's sense of economic pressure.

## **Limitations and Future Directions**

Although this study contains detailed information on the dynamics of financial self-reliance and economic pressure in early adulthood along with well-integrated demographic information the life course, it also seems to naturally raise questions about the social and psychological meanings that could accompany these findings. Thus, this section of the discussion integrates limitations of the study with directions for future research. Several conceptual and methodological issues were relevant to the expansion of this avenue of study.

First, the *self*-reliance label in this study was somewhat of a misnomer for partnered individuals in this study because the measure included the income of spouses. Rates of cohabitation in this sample were high (Appendix E) and it is not known whether cohabiting individuals reported partner income in the *spouse* or *other* category. Portions of the life paths showing low probabilities for being married may or may not have meant that individuals had high rates of cohabitation at the time. Some of these facts could be sorted out in future studies using YDS data. At the very least, marital and cohabitation status should be considered as time-varying variables in predicting levels of economic pressure because the conceptual distinctions are clearer than for the measure of financial self-reliance.

Second, use of the life path variable in this study presented some tradeoffs. On the one hand, the study benefitted by being efficient and preserving sample size. The use of a single grouping variable for identifying life paths helped to incorporate the rich

contextualism that is called for in person-centered research (Magnusson, 2003). Furthermore, the study was well-grounded in previous work (Eliason et al., 2009). On the other hand, using the life paths variable also presented limitations in the sense that it was difficult to “unpack” the specific features of the life course that might have had the greatest impact on the outcomes.

One cannot assume that life path membership causes the financial outcomes, especially because the time span in which it was constructed entirely overlaps the outcome variables. It is interesting, however, that the life path variables began tracking lives at age 17 and by age 23 and age 25 when financial self-reliance and economic pressure respectively were measured, many of the transitions to adulthood had already taken place. Thus, in a sense, much of what is contained in the life path variables had already taken place by the time the outcomes were measured. At the same time, events occurring later in the life paths did not seem to make much difference in changes that took place over time because the slopes in the trajectories were not affected by life paths. It might be fruitful to begin using the life paths to predict outcomes that occur after age 30.

Therefore, being able to measure financial self-reliance and economic pressure at earlier ages might give more insight as to what is going on during this period of the young adult’s life. At some point in life, nearly all children were financially dependent on parents, and for most, this probably continues into adolescence. Children may feel the economic pressure of difficult family conditions when they are young, but these may be qualitatively different when a person is working to provide for themselves. Tracking

these outcomes from an earlier age might result in the opportunity to examine how differences emerged up to the ages (23 & 25) where they were initially measured in this study. On the other end of the age spectrum, it appears that at age 30, levels of financial self-reliance still vary according to life path experiences and it remains unknown how long the differences are perpetuated.

Finally, additional research to investigate the inter-temporal structure of life paths is warranted. For instance, the on-time family formation group and the delayed family formation group experienced life course changes in the same order, but the on-time family formation group had less spacing between major transitions. It appears that one consequence was more economic pressure, and at rates that, with time, may increase. Parenthood timing could be an influential variable, particularly for understanding economic pressure. One promising but less often used growth curve modeling technique would be to use event-centered timing instead of tracking time according to age. This technique would help to pinpoint changes in the outcomes immediately prior to or following an event, such as marriage or parenthood (Alwin et al., 2006). The effects of age could be investigated to see if marrying or becoming a parent is more or less of a financial turning point given the age at which they occur.

### **Summary**

The participants of the YDS who have been competing surveys for the past 20 years provided a unique and valuable picture of how one American cohort of young people, coming of age in the 1990s, has forged paths to adulthood. Application of the findings in this study may be of importance to the following groups: parents of emerging

adult children and young people themselves, policy makers, educators, and researchers.

Assuming that American parents and their emerging adult children prefer eventual engagement in all or most adult roles while experiencing high levels of financial-self reliance and low levels of economic pressure, this study suggests working toward a traditional school-to-work transition with later “on-time” or “delayed” family formation. Although, parental SES was associated with movement into these paths, young adults should not overlook the equal importance of doing well academically in high school, using GPA as a stepping stone toward cultivating their own socioeconomic status. These aspects of the person’s background went further than the immutable characteristics of gender and ethnic/racial minority status to locate individuals in the life paths associated with desirable economic conditions.

Although early motherhood was associated with a gender gap in financial self-reliance it is not at all evident that by quickly catching up with their male counterparts means that mothers’ economic pressure decreases. This is a critical point for the parents of young people who have had children of their own at an early age. Some parents may assume that because their child and grandchild have been helped to become financially independent or live with the help of government assistance that the difficulties of economic pressures have been abated—these findings from the study showed that this was not the case. Outwardly, young parents who live independent of residential and financial supports may appear to be functioning better than they really are.

This point should be emphasized for policy makers as well. Financial self-reliance does not equate with the absence of economic pressure. This study suggests that the

movement of young parents toward marriage and off of government supports is not as beneficial for reducing economic pressure as formal education culminating in an orderly school-to-work transition. The early parents who married and soon after engaged in steady full-time work became more financially self-reliant but did not experience less economic pressure compared to early parents who engaged very little in additional adult roles.

Furthermore, policymakers at community, state, and federal levels who work on issues related to poverty should consider the social-psychological states of those in poor objective economic conditions. Mandates to federal law in 1996 restructured the welfare system in the U.S. into Temporary Assistance for Needy Families (TANF). Most of the large-scale follow-up research assessing the implications of the policy changes has focused on objective outcomes such as poverty levels. Those who favored the changes pointed to increased levels of financial self-reliance as individuals moved out of enrollment (Hawkins, 2005). More research is needed that investigates the economic pressures in these families because individual perceptions capture the meaning of objective conditions and mediate the effects of outward conditions on personal and relational well-being.

Due to gender and ethnic/racial differences in financial self-reliance and economic pressure, high-school and college educators should focus on incorporating content about personal financial management in courses where these populations are overrepresented. Likewise, degree programs that position graduates in work contexts where they interact with young parents should consider requiring courses in personal

finance so that professionals in those fields will be able to help support the financial decision-making and provision of resources to young parents. These fields include, but certainly are not limited to, child care, clergy, social work, clinical therapy, human resources, K-12 education, and nursing.

Finally, the results of this study lead to the conclusion that researchers should focus on the earliest years in the transition to adulthood if they want to better understand the fairly stable patterns of change in economic experience that take place across early adulthood. With few exceptions, by ages 23 and 25 respective differences in financial self-reliance and economic were essentially set in tracks that played out in systematically similar ways up to age 31. Considering the available research on financial outcomes, relatively little attention has been focused on bridging late-adolescence and the early 20s where differences were set that played out over time. The life course perspective is valuable in this regard because it intentionally challenges thinking that adolescence, emerging adulthood, and later adulthood are distinct periods of development. Rather, this study shows that family conditions at age 14 and academic achievements at age 17 immediately begin to differentiate the life paths that young people followed into adulthood. These life paths, in turn, were associated with unique economic patterns of objective and subjective factors that may have breathed unique meanings into the difference economic experiences according to life path experiences. The result is a person-centered view of life course associations with financial self-reliance and economic pressure in early adulthood.

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## Appendix A

Count of Cases by the Number of Reports of Repeated Measures

Number of Reports	Economic Pressure		Financial Self-Reliance	
	<i>n</i>	Subtotals	<i>n</i>	Subtotals
0	150		124	
1	49	199 excluded	27	151 excluded
2	68		34	
3	75		42	
4	123		53	
5	545	811 included	59	
6	--	--	64	
7	--	--	146	
8	--	--	461	859 included
<b>Total</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>

*Note:* This table was used for sample selection purposes for the baseline latent growth curve models.

## Appendix B

### Percent of YDS Participants Reporting Complete Financial Self-Reliance Or Support from Parents or Government

Ages (year)	Percent Self-Reliant	Percent Receiving any Support <sup>a</sup>		Quality Check <sup>b</sup>
		Parents	Government	
23-24 (1997)	44.7	40.0	21.3	99.5
24-25 (1998)	62.1	29.7	12.4	98.5
25-26 (1999)	72.0	20.5	11.1	99.7
26-27 (2000)	72.0	17.5	14.7	99.7
27-28 (2001) <sup>a</sup>	--	--	--	--
28-29 (2002)	72.5	18.3	13.5	99.7
29-30 (2003)	75.9	14.6	12.8	99.6
30-31 (2004)	75.1	14.4	14.6	100.0
31-32 (2005)	76.5	14.1	12.9	100.0

*Note:* (N=732). <sup>a</sup> These categories are not mutually exclusive, respondents may have received support from multiple sources. <sup>b</sup> Respondents were asked to list every source of financial support for their everyday living expenses with percentages totaling to 100% and the quality check is the percent of valid responses whose responses summed correctly. Hyphens (--) indicate waves when no data were collected.

### Appendix C

Percent of YDS Participants Reporting Complete Financial Self-Reliance by Life Path					
Ages (year)	Life Paths				
	Early parent, unmarried, minimal work (n=149)	Early parent, married, full- time worker (n=112)	School-to- work, negligible family formation (n=199)	School-to- work, delayed family formation (n=148)	School-to- work, on- time family formation (n=124)
23-24 (1997)	34.4	56.6	36.7	41.5	62.3
24-25 (1998)	47.8	73.1	52.7	65.6	78.4
25-26 (1999)	59.0	87.1	63.3	73.0	85.6
26-27 (2000)	55.7	81.7	62.0	76.2	91.8
27-28 (2001) <sup>a</sup>	--	--	--	--	--
28-29 (2002)	60.3	82.2	64.1	84.9	78.7
29-30 (2003)	58.9	84.6	69.7	83.2	87.8
30-31 (2004)	58.5	76.8	74.2	84.4	83.9
31-32 (2005)	66.1	80.0	70.0	88.5	82.1

*Note:* See Appendix B for the total sample percentages. -- No data collected.

## Appendix D

Descriptive Statistics and Measurement Characteristics of Economic Pressure Indices

Variable	<i>n</i>	<i>M</i>	( <i>SD</i> )	$\alpha$	Factor loadings <sup>b</sup>
Economic Pressure 1999 <sup>a</sup>	713	11.11	(4.89)	.85	
Stress		4.25	(1.83)		.87
Bills		3.05	(1.86)		.82
Debt		3.80	(1.89)		.73
Economic Pressure 2000 <sup>a</sup>	745	11.05	(4.78)	.86	
Stress		4.17	(1.74)		.90
Bills		3.04	(1.81)		.79
Debt		3.84	(1.89)		.77
Economic Pressure 2002 <sup>a</sup>	714	11.74	(5.07)	.89	
Stress		4.32	(1.84)		.88
Bills		3.43	(1.88)		.88
Debt		3.99	(1.86)		.82
Economic Pressure 2003 <sup>a</sup>	705	11.31	(5.15)	.90	
Stress		4.28	(1.86)		.91
Bills		3.12	(1.94)		.84
Debt		3.91	(1.90)		.82
Economic Pressure 2005 <sup>a</sup>	701	11.43	(5.04)	.90	
Stress		4.23	(1.80)		.88
Bills		3.31	(1.89)		.88
Debt		3.89	(1.88)		.80

*N*=811. <sup>a</sup>Sum of three indicators. <sup>b</sup>Factor loadings are based on a confirmatory factor analysis with the three measures in each year as indicators of each of the five latent constructs, error terms were autocorrelated from one wave to the next, and the model fit statistics were: chi-square=317.0 (*df*=68, *p*<.001), CFI=.97, IFI=.97, TLI=.95, and RMSEA=.07.

## Appendix E

### Summary of Cohabitation for YDS respondents across 175 Months (April 1991 to October 2005)

Variable	Means within Life Paths					Full Sample
	Early parent, unmarried, minimal work ( <i>n</i> =149)	Early parent, married, full-time worker ( <i>n</i> =112)	School-to-work, negligible family formation ( <i>n</i> =199)	School-to-work, delayed family formation ( <i>n</i> =148)	School-to-work, on-time family formation ( <i>n</i> =124)	
Ever cohabited (%)	.87	.76	.66	.74	.76	.67
Cumulative time (%)*	.37	.15	.21	.17	.16	.24
Month first started	47	32	76	75	51	56
Month last ended	148	81	142	117	93	114
Number of spells	2.55	1.68	1.94	1.53	1.57	1.84
Average spell duration	27.5	16.0	23.4	20.2	18.9	21.0
<i>n</i>	149	112	199	148	124	1000

\*based on a percentage of months reported

### The Current Study

Eliason et al. (2009) did not include cohabitation status in their examination of life paths because they did not consider it part of an adult role. Because this study uses the life paths variable they created, cohabitation was also omitted from the study. However, the author expects to further investigate cohabitation and its relationship with financial self-reliance and economic pressure in early adulthood.

### Review of Cohabitation Literature (A Selection)

The dramatic rise in levels of cohabitation has been a major demographic shift in the United States since the 1980s, which to a great extent has been led by present cohorts of emerging adults and young adults (Casper & Cohen, 2000). Smock (2000) indicated that cohabitation “has become so prevalent that the majority of marriages and remarriages now begin as cohabiting relationships, and most younger men and women cohabit at some point in their lives” (p. 1; also see Manning & Smock, 2002). Most cohabiting experiences are short-lived, lasting less than 3 years, with roughly half of cohabiting couples ending the relationship and the other half marrying (Bumpass & Lu, 2000; Rindfuss & VandenHeuvel, 1990).

The socioeconomic status of cohabiting couples is somewhat lower than for married couples (Bumpass & Lu, 2000; Nock, 1995; Thornton et al., 1995) which means that cohabitation could be associated with greater economic pressure. Compared with marriage, cohabitation can be a sign of poor economic circumstances in the family because good economic circumstances promote marriage whether or not an individual is already cohabiting (Clarkberg, 1999; Lichter, McLaughlin, LeClere, Kephart, & Landry, 1992; Smock & Manning, 1997). Rates of cohabitation are lower among those enrolled in school (Thornton et al.), which suggests that cohabitation, especially early on, may also stall the acquisition of human capital.

# Appendix F

## Internal Review Board (IRB) Forms

UNIVERSITY OF MINNESOTA

### Research Exempt from IRB Committee Review Category 4:

EXISTING DATA: RECORDS REVIEW & PATHOLOGICAL SPECIMENS

<b>Route this form to:</b> See instructions below.	<b>U Wide Form:</b> UM 1573 <b>Rev: 2/15/08</b>
---	---

<b>IRB Use Only</b>	
<b>#</b>	

**Submission Instructions:**

E-mail a copy of this application and any other materials required to the Research Subjects' Protections Programs Office: [RSPPeRev@umn.edu](mailto:RSPPeRev@umn.edu)

*Electronically submitted protocols must be sent from a University of MN e-mail account. Original signatures are not required. U of M x.500 IDs have been deemed by the University of Minnesota to constitute a legal signature.*

*Academic Advisors and Co-Investigators should be carbon copied (Cc) on the submission e-mail.*

For help with this form and to download additional appendices: see <http://www.research.umn.edu/irb/download/> or call 612-626-5654

**1.1 Project Title** (Project title must match grant title. If different, also provide grant title):

Clinton G. Gudmunson Doctoral Dissertation
--

**1.2 Principal Investigator (PI)**

Name (Last name, First name MI): <b>Gudmunson, Clinton G.</b>	Highest Earned Degree: M.S.
Mailing Address: 1290 Fifield Place Falcon Heights, MN 55108	Phone Number: 651-645-7542 Pager or Cell Phone Number: 651-795-9902 Fax: 612-625-4227
U of M Employee/Student ID: 3332865	Email: cgudmuns@umn.edu
U of M x.500 ID (ex. smith001): cgudmuns	University Department (if applicable): Family Social Science
Occupational Position: <input type="checkbox"/> Faculty <input type="checkbox"/> Staff <input checked="" type="checkbox"/> Student <input type="checkbox"/> Fairview Researcher <input type="checkbox"/> Gillette Researcher <input type="checkbox"/> Other:	
Indicate the training and education completed in the protection of human subjects or human subjects records. Training is required for all research. Category four research projects require human subjects training. HIPAA training alone is not sufficient. <b>*Refer to training links at the end of this section</b>	
Human Subjects Training (one of these must be checked) <input checked="" type="checkbox"/> CITI <input type="checkbox"/> Investigator 101	HIPAA Training (Required if Data Contains PHI) <input checked="" type="checkbox"/> HIPAA
<p><b>As Principal Investigator of this study, I assure the IRB that the following statements are true:</b>                  The information provided in this form is correct. I will seek and obtain prior written approval from the IRB for any substantive modifications in the proposal, including changes in procedures, co-investigators, funding agencies, etc. I will promptly report any unexpected or otherwise significant adverse events or unanticipated problems or incidents that may occur in the course of this study. I will report in writing any significant new findings which develop during the course of this study which may affect the risks and benefits to participation. I will not begin my research until I have received written notification of final IRB approval. I will comply with all IRB requests to report on the status of the study. I will maintain records of this research according to IRB guidelines. The grant that I have submitted to my funding agency which is submitted with this IRB submission accurately and completely reflects what is contained in this application. If these conditions are not met, I understand that approval of this research could be suspended or terminated.</p>	
cgudmuns	4/6/2009
x.500 of PI	Date

### 1.3 Department, Division Head, or Dean Information

Please note as the researcher, you are responsible for confirming and following your departmental standards and requirements for research.

B. Jan McCulloch
Name of Department Head, Division Head, or Dean

#### \*Training Links

CITI - <https://www.citiprogram.org/default.asp>

FIRST - <http://www.research.umn.edu/first/HumanSubjects.htm>

Investigator 101 - <http://www.research.umn.edu/irb/training/>

HIPAA - <http://www.research.umn.edu/first/AdditionalCourses.htm>

See the [Responsible Conduct of Research \(RCR\) web site](#) for information of human subject protection training.

### 1.4 Are there additional Co-Investigators and Staff?

Yes. Download an [extra personnel sheet](#) and include it with your application. 

No. Continue to 1.5.

### 1.5 Is the PI of this research a student?

Yes. Include [Appendix J](#). 

Electronically submitted protocols must be carbon copied (Cc) to their advisor.

No. Continue to 2.

Academic Advisor to the Student Investigator	
Advisor's Name (Last name, First name MI): <b>Virginia S. Zuiker</b>	University Department: <b>Family Social Science</b>
Mailing Address: 290 McNeal Hall 1985 Buford Ave St. Paul, MN 55108	Phone Number: 612-625-4225
	Email: <b>vzuiker@umn.edu</b>
	U of M x.500 ID (ex. smith001): vzuiker

## 2. Funding

### 2.1 Is this research funded by an internal or external agency?

Yes. Include [Appendix A](#). 

No.

If no, explain how costs of research will be covered:

Via student research/teaching assistantships and student loans
--

### 3. Institutional Oversight

3.1 Will this research be utilizing Fairview Health System resources or medical records?

- Yes.  
 No.

3.2 Will this research be utilizing Gillette Children's Specialty Healthcare or medical records?

- Yes.  
 No.

3.3 Is this research proposal being reviewed by any other institution or peer review committee?

- Yes. It is the responsibility of the PI to secure the appropriate approval from these committees and document that approval to the IRB. Attach a copy of documentation of approval, if received, and indicate committees below.  
 No.

If yes, then please list which committees will review this proposal:

not applicable

### 4. Conflict of Interest

4.1 Do any of the investigators or personnel listed on this research have a potential conflict of interest associated with this study? Conflict of interest is defined in Appendix Y.

- Yes. Include [Appendix Y](#).   
 No.

### 5. Use of Protected Health Information (PHI): HIPAA Requirements

5.1 As part of this study, do you:

- a. Collect protected health information (PHI)\* from subjects in the course of providing treatment/experimental care; or
- b. Have access to PHI\* in the subjects' records?

Please read the definition of PHI below before answering.

\*PHI is defined under HIPAA as health information transmitted or maintained in any form or medium that:

1. identifies or could be used to identify an individual;
2. is created or received by a healthcare provider, health plan, employer or healthcare clearinghouse; and
3. relates to the past, present or future physical or mental health or condition of an individual; the provision of health care to an individual; or the past, present or future payment for the provision of healthcare to an individual.

The following records ARE EXEMPTED from the definition of PHI even though they may contain health-related information: student records maintained by an educational institution and employment records maintained by an employer related to employment status. If your study uses these kinds of records, it is not subject to HIPAA. However, existing IRB rules on informed consent and confidentiality still apply.

**Health-related information is considered PHI if (any of the following are true):**

1. the researcher obtains it directly from a provider, health plan, health clearinghouse or employer (other than records relating solely to employment status);
2. the records were created by any of the entities in "1" and the researcher obtains the records from an intermediate source which is NOT a school record or an employer record related solely to employment status; OR
3. the researcher obtains it directly from the study subject in the course of providing treatment to the subject.

Health-related information is not considered PHI if the researcher obtains it from:

1. student records maintained by a school;
2. employee records maintained by an employer related to employment status; OR
3. the research subject directly, if the research does NOT involve treatment.

- Yes. If yes to a or b above, complete Appendix H to show how you will satisfy HIPAA requirements for authorization to use PHI in research. 
- No.

## 6. Summary of Activities

*Use lay language, do not cut and paste from or refer to grant or abstract.*

### 6.1 Briefly state what is your research question.

How are post-adolescent life transitions (leaving home, financial independence from parents, post-secondary education, career initiation, marriage, cohabitation, and parenthood) related to economic pressure in early adulthood?

### 6.2 Describe the source of the records; medical, educational, employment, existing data set, or pathological specimens (waste).

*For approval in this category you must plan to use an existing data set without access to identifiers, records review to which you have permissible access to records when the chart is older than January 1, 1997, or where the patient has signed a consent form which is in the file after January 1, 1997, or collecting waste tissue after it has been released to pathology.*

The data will come from the Youth Development Study (YDS). This is a survey-based, 20-year longitudinal study that began in 1988 with 1000 high-school students. Jeylan Mortimer (Sociology, U of M) is the principle investigator of the study, serves on the committee of the student PI, and has given permission to use a relevant deidentified portion of the data.

### 6.3 Number of records or specimens to be used:

1000 or less

### 6.4 How long do you anticipate this research study will last from the time you are determined to meet the criteria for exempt research?

Exempt research is generally considered short-term in nature. This office routinely inactivates exempt applications after five years from the time it was determined to meet the exempt criteria. If you think your project will extend beyond five years, contact the IRB office (612-626-5654 or [irb@umn.edu](mailto:irb@umn.edu)).

Less than five years: The dissertation is expected to be completed in 1 year, both other publications based on the dissertation study are expected and could last up to 5 years.

### 6.5 Is the data you are gathering publicly available?

- Yes. Continue to 7.1  
 No. Continue to 6.6

### 6.6 Do you already have permissible access to the records or specimens (i.e. through a job, volunteer work, internship etc.)

- Yes. Describe how you have permissible access to the records.

The principle investigator has granted access for use in a dissertation, and follow-up studies.

- No. Continue to 6.6a

### 6.6a Will the records you receive be stripped of all identifiers that would make it possible for you to identify a subject?

- Yes. Continue to 6.7  
 No. This research does not qualify for exempt status. Please complete the full IRB application, requesting expedited review if appropriate.

**6.7 Confirm that the data/specimens you wish to review already exist**

- The data set exists.
- The data set does not already exist.

*If the data is not already collected, the research does not qualify for exempt category four research. Please complete the full IRB application requesting expedited review if appropriate.*

**6.8 Please confirm that you will not have access to, or create a link, which would make it possible to identify subjects.**

- I will not have access to, or create, a link.
- I will have access to a link.

*If you have access to, or create a link you do not qualify for exempt category four research. Please complete the full IRB application requesting expedited review if appropriate.*

**6.9 Describe the identifying information to which you will have access prior to recording data:**

I do not have and will not have access to identifying information.

**6.10 Describe the identifying information you will record:**

*Please note in order to proceed with exempt research under category four, you may not record information in such a manner that subjects can be identified directly or through identifiers linked to subjects.*

I will not record any identifying information and will not have any access to the study participants

**7. Confidentiality**

See [Protecting Private Data Guideline](#) from the Office of Information Technology (OIT) for information about protecting the privacy of research data.

**7.1 Describe provisions taken to maintain confidentiality of data:**

The data will be deidentified before the student receives them. The data will not be shared with anyone who has not been granted prior access except for the student's advisor who will periodically be shown demonstrations of the techniques used to analyze the data.

**7.2 Describe the security plan for data including how and where stored and duration of storage (i.e., password protection, encrypted data, etc.):**

The deidentified data will be stored on a maximum of two password-protected, desktop computers, that are in a locked area when the space is not being used by authorized individuals.

**7.3 Will identifiable data be made available to anyone other than the PI?**

- Yes.
- No.

**If yes,** explain who and why they will have access to the identifiable data:

not applicable

**This regulation does not apply to FDA regulated research.**

*You have reached the end of this form. Please make sure that you have responded to every question on this application (even if your response is "not applicable").*

## Appendix J

### Student as Principal Investigator Worksheet

Use this worksheet in collaboration with your Academic or Project Advisor to demonstrate research preparedness of the Student investigator.

*To be completed by the Academic Advisor*

**1. Student academic level: (check all that apply)**

- Undergraduate  
 Graduate:  Masters candidate  Ph.D. candidate

**2. Explain how the scope of the proposed project, including anticipated risks and benefits, is appropriate to student research?**

The proposed research uses deidentified secondary data from the Youth Development Study, which is an ongoing survey panel data set with previous University of Minnesota IRB approval. The student PI using this data does not and will not have access to identifying information of participants. The risks and benefits of this research are comparable to the risks and benefits associated with dozens of other published, peer-reviewed, reports from this study, including the possibility that the study participants could read the report and feel some discomfort or be encouraged with the summary findings for the group.

**3. Explain what experience, training or special preparation, the student researcher brings to the project from relevant coursework or professional exposure:**

The student has completed doctoral degree coursework, has completed online CITI and HIPPA training, holds a master's degree in the field, has published in peer-reviewed journals, used large panel data sets, and has secured permission to gain access to and use the data set from the PI of the Youth Development Study for this dissertation.

Updated May 2006

<b>Print PI Name</b>	<b>Date</b>

Student as Principal Investigator Worksheet – Appendix J



## Appendix G

### Some Technical Tips for Fitting Latent Growth Curve Models in AMOS

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1. Fit a growth curve model using the AMOS macro. This is a selection from the *plugin* menu.
2. Check the box *estimate means and intercepts*; this feature enables Full Information Maximum Likelihood (FIML) estimation of missing data.
3. Regression weight for intercepts should be fixed at 1.
4. Regression weights for slope define the location of the intercept and the spacing between waves. It is common to start at 0 for an intercept located at the initial point of measurement.
5. The means for the latent intercept and slope variables should not be set to zero, they need to be freely estimated
6. The intercepts of the observed variables should be fixed at zero; this forces a grand mean in the latent variable.
7. Commonly, the error variances are constrained to be equal. This can be done by labeling the variances of the errors with the same name.
8. The parameters for the intercept and slope are the mean and the variance of the variables.

---

*Note:* Tips based on a tutorial retrieved February 16, 2009 from:

<http://www.amosdevelopment.com/video/growthcurve5/flash/growthcurve5b.html> (also see Hox, 2002).

## Appendix H

YDS Percentages of Financial Support for Living Expenses from Self/Spouse, Government, and Parents, Ages 23-31

