

Newlywed Couples' Debt Portfolios: Are All Debts Created Equally?

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This study investigates the composition of newlywed couples' debt portfolios as it affects their debt difficulty, measured via three different financial ratios--a solvency ratio, a liquidity ratio, and a debt repayment ratio. While about 90% of all couples had some debt, the newlywed couples, all at the same family life cycle stage, had quite variable debt portfolios. Having charge account balances due, automobile loans outstanding, and other debt (including medical and educational debt and debts owed to family and friends) most consistently discriminated newlywed couples at risk for debt difficulty from other couples.

KEY WORDS: *debt, financial ratios, debt portfolio*

The increasing level of consumer indebtedness is well documented, as is the fact that more families are having difficulty with debt repayment and insolvency than ever before (DeVaney & Lytton, 1995). Recent studies of household debt difficulty have used financial ratios to measure or predict families' financial difficulties (e.g., DeVaney, 1993; 1994; Griffith, 1985; Johnson & Widdows, 1985; Iwuagwa, 1989; Lytton, Garman & Porter, 1991; Prather, 1990; Prather & Hanna, 1987). DeVaney (1993; 1994), using the 1983-86 Survey of Consumer Finances panel, showed the utility of solvency, liquidity, and debt repayment ratios in predicting families' future insolvency. Almost all the studies investigating the issue of predictors of family debt difficulty have focused on the role of income or demographic factors (e.g., Canner & Lockett, 1990; DeVaney, 1994; Sullivan & Fisher, 1988). Although families' debt portfolios have changed rather markedly (Avery, Elliehausen & Kennickell, 1987; Kennickell & Shack-Marquez, 1992), little research has investigated the composition of families' debt as it influences debt difficulties.

All types of debt may not be created equally in terms of their effect on families' debt difficulties. Different types of debt instruments are not created equally in terms of availability, costs, flexibility of payments, risk, length of term, or tax status. New types of credit, such as variable rate and secured credit cards, and equity credit lines, have increased consumers' choices in the credit market. A reading of the popular media would suggest that the increased availability of credit cards is responsible for the

increase in over-indebtedness. Available research does not address such a speculation, nor does it provide any insights into the role that other types of debt may play in family debt difficulty. One purpose of this study is to investigate newlywed couples' debt difficulty as a function of the *type of debt* they hold, including outstanding bills, credit cards, charge accounts, installment debt, automobile debt, and other debt.

The literature shows no consensus on the best measures to indicate families' debt difficulties. In fact, DeVaney & Lytton (1995) reviewed no less than two dozen different ratios measuring some aspect of the difficulties families have with their solvency, liquidity or debt repayment. There is no reason to think that consensus will evolve on the superiority of a single measure of debt difficulties of families because different measures may be useful for seeing a different part of the picture of families' debt (and for helping families diagnose different debt problems). Whereas a family's solvency ratio may be indicative of the likelihood of overall debt difficulty leading to the declaration of legal bankruptcy, their liquidity may best predict how they may effectively cope with a temporary decline in income. A second purpose of this study is to assess the effects of different types of debts on newlywed couples' debt difficulties across *different measures* of debt difficulty, including indicators of solvency, liquidity, and debt repayment.

Note that this study focuses on newlywed couples, all within their first year of marriage. Debt difficulties are, of course, not limited to these types of families; focusing

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on factors related to their debt status limits the external validity of the study. We hope to contribute to an understanding of the etiology of debt difficulties, which ideally would include a panel analysis of all types of families over time. For now, we investigate the beginning of the family life cycle by studying first-married newlyweds. An advantage of this sampling strategy is that because the sample is homogenous with respect to marital status and stage in the family life cycle, it controls a number of potentially important confounding variables that may influence the acquisition and repayment of debt.

Review of Literature

Amounts and Types of Family Debt

In recent years, the number of families with debt, as well as their median balances, has increased for mortgages, home equity loans and lines of credit, automobile loans, credit cards and other debt (Kennickell & Shack-Marquez, 1992). In addition, typical debt portfolios have also changed in recent years. Credit card and automobile loans have increased by the largest proportions, while mortgage loans have declined as a fraction of total debt, not because of a decline in mortgage amounts but because other forms of debt increased more (Kennickell & Shack-Marquez, 1992). Credit card debt has risen especially sharply. For credit card revolvers, the average outstanding balance more than doubled (in constant dollars) from \$649 in 1970 to \$1,472 in 1986 (Canner, 1988). In 1983, credit card debt comprised about 17% of all consumer debt in the typical family portfolio, while by 1986 its share had risen to over 25% (Kennickell & Shack-Marquez, 1992).

It appears to be increasingly important to differentiate between various types of debt. While the total amount of a family's debt is important for assessing their overall debt load, differences in mortgage debt and consumer debt should obviously be taken into account because of differences in term, secured versus unsecured status, and tax treatment. Different factors may be important to families' decisions to incur mortgage debt from those important in making decisions about various forms of consumer debt.

Predictors of Family Debt Amount

Several studies have examined predictors of families' amount of total debt or the amount of certain types of debts (Duca & Rosenthal, 1990; Durkin & Elliehausen, 1977; Heck, 1983; 1987; Hira, 1990; Lindley, Rudolph & Selby, 1989; Liao, 1994; Luckett & August, 1985; Lunt & Livingstone, 1992; McAlister & Kinsey, 1979; Rouse,

1994; Steidle, 1994; Sullivan & Worden, 1986). Researchers have generally examined three types of factors as predictors of the amounts of debt held by families or the use of certain types of debt: demographic characteristics, financial status variables, and attitudinal indicators. These types of factors correspond to the factors examined here: families' need for borrowing money, their ability to borrow, and their willingness to borrow.

One of the most commonly posited hypotheses regarding family debt has been the life-cycle income hypothesis, which suggests that *need for borrowing* money to meet current consumption needs drives the acquisition of families' debt (Ando & Modigliani, 1963; Bryant, 1990; Thurow, 1969). This hypothesis suggests a mismatch between income and demand for goods at certain points in families' lives when they maintain consumption by borrowing from future income. Several studies have found debt to be higher among younger households than among households with older heads (Duca & Rosenthal, 1990; Durkin & Elliehausen, 1977). However, installment debt has been found to be highest among middle-aged (aged 35-54) households (Canner, 1988) and credit card use increases linearly with age up to age 65 (Lindley, Rudolph & Selby, 1989). Family structure is also thought to capture some life-cycle borrowing needs. One study (McAlister & Kinsey, 1979) found that married-couple households have more credit cards and use them more than do households with non-married heads. However, another study that controlled for age found single individuals more likely to be in debt than married couples (Lunt & Livingstone, 1992). Household size, a factor surely confounded with age and marital status, also has been positively related to debt (Hira, 1990).

But, many of these characteristics posited to influence need for borrowing also capture families' credit worthiness or their ability to borrow money at traditional financial institutions (Capon, 1982). One way to sort out the separate effects of these variables would be to assess via panel data the varying levels of debt families incur as they age throughout the family life cycle and simultaneously possess various levels of credit worthiness. Another way to separate the effects of the variables is to control for family life cycle via sampling by examining only families at one stage of the life cycle, which is the approach taken here. The families in this study are all newlyweds, studied within one year of their marriage. As such, they are all at a comparable place in their family financial life cycle. As such, they all face the same consumption demands associated with starting

a household. Additional variables, however, that might also capture differences in "need" for borrowing will also be examined to ascertain whether a need-based explanation for credit difficulties can be supported.

Indicators of families' *ability to obtain credit*, such as income and the number of income earners, have also been investigated as predictors of family debt levels. In univariate studies, a positive effect of income on total debt (Avery, Elliehausen & Canner, 1984; Kennickell & Shack-Marquez, 1992), on installment debt (Lunt & Livingstone, 1992; Sullivan & Worden, 1986), and on credit card debt (Canner, 1988; Garcia, 1980) had been consistently found. Bloom & Steen (1987) found that, holding age constant, the positive income effect remained and suggested that income is "the single most important determinant of future family borrowing" (Bloom & Steen, 1987, p. 28). Family income is the most often-used indicator of ability to repay debt used by creditors, but other factors may also capture a family's ability to obtain debt, such as the number of sources of income (including whether there are one or two employed spouses), the certainty with which they will continue to receive those sources of income, and the head's occupational status. Income uncertainty has particularly been studied (e.g., Fan, Chang, and Hanna, 1993) and found to be an important predictor of household credit use.

While families' need to borrow money and their ability to obtain credit are clearly important, *families' willingness to borrow* may also explain the amount of debt that families incur. Attitudes toward credit have neither been constant over time nor the same for all consumers. Bloom & Steen (1987) found that "attitudes towards borrowing became increasingly conservative between 1977 and 1983" (p. 24). However, the proportion of consumers who deemed borrowing appropriate for normal living expenditures increased from only one-fourth of respondents in 1959 to about one-half of respondents in 1973. Several recent studies have found a positive relationship between consumers' attitudes toward the acceptability of credit and their amount of debt (Duca & Rosenthal, 1990; Sullivan & Worden, 1986), and their use of credit cards (Heck, 1987).

Consumers' risk aversiveness also has been studied as a predictor of their amount of debt. Incurring debt involves risking the inability to repay that debt with all the negative consequences that implies. Families' debt holdings may be smaller the more risk averse families are (Duca & Rosenthal, 1990). Expectations about the future

of the economy and the family finances may also affect willingness to incur debt and total debt owed (Lockett & August, 1985). Heck (1987) found consumers who were optimistic about the future of the economy used their credit cards more than pessimistic consumers. Canner & Lockett (1990) and Heck (1987) found that expectations of increased family income (particularly relative to expectations about prices) increased use of credit cards.

Predictors of Debt Repayment and Delinquency

The average consumer debt repayment/income ratio of American families increased from 2% in 1945 to 18% in 1985 (Bloom & Steen, 1987) and 19% by 1989 (Canner & Lockett, 1990). Between 1983 and 1989, the median ratio of non-mortgage debt payments to family income rose from 15.0 to 21.0 among families in the highest third of the debt repayment/income distribution (Kennickell & Shack-Marquez, 1992). Among families with incomes lower than \$10,000, the debt payment to income ratio of highly indebted families rose from 32.1 in 1983 to 39.7 in 1989. There is clearly a subset of low income families having very high debt burdens, but the typical debt burden of families has risen regardless of income and debt has grown "most rapidly among those families with the greatest ability to pay" (Kennickell & Shack-Marquez, 1992, p. 16).

Researchers have investigated the predictors of delinquency in repaying debt and default (Canner & Lockett, 1990; Moses & Liao, 1987; Peterson & Peterson, 1981; Sullivan & Fisher, 1988). Peterson & Peterson (1981), using data the Federal Reserve System collected from commercial banks, studied the effect of loan terms and borrower characteristics on default rates on new car loans. Loan terms and down payment rates significantly affected risk of default. They concluded that "creditors may be able to extend credit to otherwise marginal risk borrowers by adjusting loan terms to obtain compensatory reductions in default probabilities" (p. 5). This recommendation was limited to borrowers who could afford higher down payments, which also substantially reduced risk of default. Credit applicants' age, occupation, and source of employment (a proxy for employment stability) also were related to risk of default. The effect of each of these factors differed according to the terms of the loan. Peterson & Peterson (1981) suggested that creditors "develop separate credit evaluation criteria to determine which credit applicants would qualify for a loan with a particular set of terms" (p. 5).

Sullivan & Fisher (1988) used 1983 Survey of Consumer Finances (SCF) data to investigate the financial characteristics of consumers that predict risk of delinquency. In univariate analyses, they found negative effects of income, age and education on credit delinquency. Female-headed households were also more likely to report debt payment problems than male-headed households in all age groups. The total debt/income ratio of families was inversely related to slow or missed debt payments; when mortgage debt is included families with higher debt burdens have less debt delinquency. However, including only consumer debt outstanding in the debt burden ratio, there is a positive relationship between debt burden and slow payment.

Canner & Lockett (1990) also used the 1983 SCF to analyze consumers with payment problems in a multivariate logit analysis. Debt payment problems were most severe among younger households, those with the lowest amount of liquid assets relative to debt, non-white households, and those with the most children and with separated or divorced heads who received government assistance. Late debt payment was more likely when the debt was for a durable good or from finance companies. With these variables controlled, income had no effect on debt repayment, nor did the ratio of debt payments/income. The strongest predictors of debt difficulty were family characteristics, followed by loan characteristics. In this re-analysis of the data used by Sullivan & Fisher (1988), the importance of multivariate analyses for determining the partial effects of variables on consumer debt difficulty was demonstrated.

These studies typically used only one measure of families' debt difficulties as their dependent variable. However, DeVaney (1993) tested the usefulness of various financial ratios in predicting future financial insolvency of families, (a net worth of less than one month's income). Using data from 1,934 families in the 1983 and 1986 Survey of Consumer Finance, she found three ratios to be statistically significantly related to propensity for insolvency. The most important was a liquidity ratio, measured as liquid assets/disposable (or net) income. The next most important was a debt payment ratio, calculated by dividing gross debt payments by disposable income. The final ratio related to families' financial distress was a solvency ratio, total assets/ total liabilities. Each of these ratios was significantly related to the propensity of families to be insolvent, even with several demographic factors controlled. These ratios were more strongly related to

families' financial difficulties than the demographic characteristics she examined.

None of these analyses have included the composition of family debt portfolios among the predictors of family debt difficulty. The basic question is, apart from the risk represented by certain types of families obtaining certain types of debt, are there components of the debt portfolio that are particularly likely to result in debt difficulty? Other factors that have been found to affect propensity for debt acquisition or families' difficulty with debt are also simultaneously examined and made available as controls.

Methods

Sample and Data Collection

The sampling goal was to acquire a statewide representative sample of newlywed couples. Newlywed spouses were selected via a two-stage random sampling process. First, 53 counties in Georgia were sampled from its 159 counties. Then, marriage license applications in 1991 in the county offices were systematically randomly sampled to obtain a mailing list of first married newlywed couples. Of approximately 4200 names gathered, 800 were randomly sampled from the list. In May, 1992 questionnaires were mailed to the couples, using Dillman's (1978) techniques. A follow-up postcard and another questionnaire were sent two and four weeks later, respectively. Because of undeliverable questionnaires, ineligible couples and nonreturns (n=108), the data for this analysis are from 256 newlywed couples; this represented an eligible return rate of 40%, a reasonable rate given the length and nature of the questionnaire. Still, the sample must be considered a sample of Georgia newlywed couples who had been married approximately one year or less, and, as such, the results can only be generalized to similar couples.

The sample spouses were mainly in their twenties, although over one-fifth of the husbands and one-tenth of their wives were 30 or older, not unexpectedly given today's higher average age at marriage. Husbands' and wives' education averaged about 14 years. Husbands were employed in occupations ranging from professionals to unskilled laborers. Of the 75% of wives who were employed, over one-third worked in sales or clerical jobs. About 25% of both husbands and wives had received some form of training in financial management issues at some time in the past.

Measurement of Variables

Respondents were asked to report in an open-ended format the current market value of their various assets and the outstanding balance due on the various debts they owed on December 31, 1991. Subjects reported the account balances for 18 different types of paper assets, including cash, checking accounts, savings accounts, money market accounts, stocks, bonds, mutual funds, IRAs and Keogh accounts, cash value of permanent life insurance and other paper assets. Additionally, they reported the fair market value of 11 different types of tangible assets, including houses and other real estate, autos, collectibles, and other tangible property. Respondents could report in an open-ended format 19 different debts, including outstanding bills, credit card balances, charge account debt, installment loans, automobile loans, mortgage loans, home equity debt, personal loans, and other debt. A final measure of family debt was taken by asking "Out of your current monthly income, about how much do you use to repay debt that you obtained in the past, excluding mortgage payments?" Fourteen closed-ended responses were available: \$0, \$1-49, \$50 - 99, \$100 - 149, ... \$500 - \$749, \$750 - 999, and \$1000 or more. These responses were recoded to the midpoints of the categories.

Measures of debt risk. Measures of debt risk chosen for this study were comparable, though not identical, to those found by DeVaney (1993) to be significant predictors of future family insolvency. The first was a *solvency ratio* that captures the degree to which families' debts could be paid off by liquidating their entire portfolio of assets. It is the debt/asset ratio, calculated by dividing the total outstanding liabilities of the family by the total value of their assets. This ratio measures the overall solvency of the family's position and standardizes the relationship between debts and assets to allow comparison of families with very different levels of assets. Using the debt/asset ratio (instead of the asset/debt ratio or the net worth/assets ratio; c.f. Griffith, 1985) eliminates the common problem of calculating the ratio for families with zero values for total debts or negative net worth values. Families with no debts have a value of zero (the very most solvent position) and families with a value of one or above are technically insolvent. For purposes of the final analyses, the *debt/asset risk* variable was recoded to a dichotomous variable; families with a debt/asset ratio of less than .70 were assigned a zero (no risk) and families with a debt/asset ratio of greater than or equal to .70 were assigned a one (insolvency risk).

The second ratio measuring families' debt risk was a *liquidity ratio*, which measures the ability of the family

to cover current debts with their available liquid assets. This is commonly used as a measure of emergency preparedness capturing how well families can pay their debt in the face of decreased income (such as when a breadwinner becomes unemployed). The liquidity ratio was calculated as the liquid assets of the family divided by the "current" debts of the family. Liquid assets are those assets easily converted into cash with little loss in market value (i.e., cash, checking account balances, money market balances, and bank savings accounts). Current debts are defined (Gitman & Joehnk, 1996) as due and payable within one year, and included in this study all outstanding bills, credit card debt, charge account balances, and installment loans of 12 months term or less. A ratio of 1.0 indicates that the family can cover all their outstanding consumer debt with liquid assets should their income decline. This ratio is a better measure of the families' liquidity than those liquidity ratios that use families' disposable income or monthly consumption expenditures in the denominator because the latter measures only serve as a proxy for the actual current debt obligations of the family. For the analysis of liquidity risk, this variable was dichotomized; families with a liquidity ratio of greater than or equal to 1.0 were assigned a zero (no liquidity risk) and families with liquidity ratios of less than 1.0 were assigned a one (risk of illiquidity).

The final ratio was a measure of families' *debt repayment* burden. It was calculated as the monthly debt repayment on all consumer debts divided by the monthly net income. Because mortgage debt is qualitatively different in several respects from consumer debt, this ratio includes only non-mortgage (or consumer) debt. The measure was calculated by dividing the typical monthly debt payment by their total monthly net income (total 1991 net income divided by 12). For the measure of *debt repayment risk*, this variable was dichotomized; families with a debt repayment income ratio of less than .20 were assigned a value of zero (no risk) and families with a debt repayment/income ratio of .20 or greater were assigned a value of one (risk of debt repayment burden).

There is no consensus about which of dozens of financial ratios that are possible to calculate are best to use. These three ratios have several important characteristics for purposes of this study. They all focus on the debt status of the family. They are intuitively understandable to families because of their ready translation into measures of the common debt problems that families face. They measure the three most important dimensions of a family's debt situation--their solvency, liquidity, and debt

repayment safety. They also avoid the common problems of some other ratios that result in undefined values (such as those which have a zero in the denominator for some families). Finally, they compare stocks to stocks and flows to flows, not, as is the case of some other ratios, comparing a stock (such as liquid assets held at one point in time) to a flow (such as disposable income obtained over a year). In other words, they keep intact the important conceptual distinction between data on the family's balance sheet and their cash flow (or income and expenditure) statement.

There is also no consensus about what level of each ratio constitutes a "risk" to families, either in an absolute or relative sense. It would be ideal, of course, to identify the exact level of each debt ratio that results unequivocally in financial difficulty for all families (an ideal which is likely unattainable). Absent such information, the cut-off points were devised here based on discussions in DeVaney (1993, 1994) and Gitman and Joehnk (1996) and several years of experience in their use in research and practice.

Measures of type of debt Newlywed couples' debt was analyzed according to eight different types of debt: mortgage debt, home equity loans or credit lines, outstanding bills, credit card debt, charge account debt, installment loans, automobile loans, other debt (including educational debt, medical debt, and debt to family and friends). For descriptive purposes, these variables were measured continuously as the sum of the various individual items (for example, credit card debt was the sum of the debt on all credit cards listed) in order to present frequency distributions, means, and medians. For later analyses of the debt risk of families, each of the variables was dichotomized. If a couple had a specific type of debt, they were assigned a code of one, if they had no debt of a specific type, they were assigned a zero. In fact, later analysis revealed that the number of couples with home equity loans was too small to include this variable in the analysis; thus, there were seven types of debt included in the discriminant analyses.

Measures of other predictors of debt difficulty A comprehensive set of variables other than the types of debt help by families were measured and made available for entry into the analyses of debt difficulty in order to control for other factors that have been found to relate to the amount or types of debt held by families. Four indicators of *families' need for borrowing* were measured. Whether the family had a child was a dummy variable where 1= had a child and 0 = otherwise. The

number of major family changes was the sum of seven items asking whether the family structure had changed, whether each spouse had begun or quit a paid job, whether either had been unemployed or had a significant health problem. A third variable was perceived income adequacy, measured with a single 5-point Likert-type item, "How adequate do you feel your income is in meeting your needs?" Responses ranged from "more than adequate to meet all of our needs and wants" (coded 5) to "much less than adequate to meet even our basic needs" (coded 1). A final variable was the certainty of income receipt. One Likert-type item, "How certain are you that you will continue to receive the same amounts of income from your main sources of income for the next year?" measured this variable. Five responses were available ranging from "very certain" (coded 5) to "very uncertain" (coded 1). Each of these variables captures some aspect of a newlywed couples' need for extra resources that may be met by borrowing money.

The indicators of *ability to obtain credit* included eight variables that are traditionally used by lenders as indicators of credit worthiness or indicate a couples' financial stability or knowledge of the credit marketplace. First, the age of the financial manager in years is measured. If the couple indicated that both completed the questionnaire, then the age of the husband, which was highly correlated with the wife's (.83), was used. The financial managers' education was also measured in years and treated as a continuous variable. The total family income was measured as gross income during 1991 reported on the couples' 1040 tax form. Eighteen response categories were available ranging from \$0, \$1 - \$2499, \$2500 - \$4999 to \$60,000 - 69,999, \$70,000 - \$79,000, and \$80,000 and over. Income was recoded to the midpoints of these categories and used as a continuous variable; couples in the \$80,000+ category were assigned a code of 85,000, extending the pattern of the previous recoding to the midpoints. A fourth variable representing couples' ability to obtain credit was the employment status of the wife, a dichotomous variable coded one if the wife was employed in a paid job and zero otherwise. The occupational status of the financial manager was coded according to Hollingshead's occupational codes, ranging from professionals (coded here as the highest code of 7) to unskilled laborer (coded 1). The number of sources of family income was a count of the number of different sources from which the couple obtained income, including husbands' and wives' earnings in primary and second jobs, investment income from a variety of sources, and other sources. Two final indicators of couples' ability to obtain credit was whether

either spouse had any prior training in financial management. Husbands' family financial training was coded 1 if he had had any type of training in the past and zero otherwise; an identical variable captured wives' past training. Each captures some aspect of the couples' credit worthiness or their ability to understand and complete the financial transactions involved in obtaining credit.

Five variables were measured that captured some aspect of families' *willingness to borrow money*. One indicator of willingness to borrow was an attitudes toward credit scale. Respondents were asked ..."please tell whether you feel it is all right for someone like yourself to borrow money to..." for ten different reasons, ranging from "cover the expenses of a vacation trip" to "finance educational expenses" to "finance the purchase of a car." The number of "yes" responses was summed to form an index of how respondents viewed using credit for a variety of purposes.

Three other attitudinal variables were derived from a factor analysis of a set of 20 items that had been adapted from previous instruments in a pilot study. Factor analysis with varimax rotation was used to discern whether there were underlying factors that could more parsimoniously represent a larger number of variables. A factor loading cut-off point of .40 was used to identify each item that loaded on each factor. The analysis yielded three composite variables which were named feelings of control, attitudes toward planning, and time horizon. Feelings of control indexed four Likert-type statements measuring the extent to which respondents felt that their lives were under their control; the scale had an Cronbach's alpha reliability of .70. Three Likert-type items comprised the attitudes toward planning scale, which had an alpha reliability coefficient of .63. The time horizon variable was composed of two semantic differential items where the ends of a bipolar continuum were anchored with the phrases "think a lot about things that might happen in the future" and "usually take things as they come" for one item and "kind of person that plans life ahead all the time" and "lives more from day to day" for the second item. This index had a Cronbach's alpha of .74. In each case, the variable was coded such that a high code indicated a more positive dimension--feeling more in control, positive attitudes toward planning, and a future-oriented time horizon.

A final attitudinal indicator that may capture some aspect of couples' willingness to borrow is their attitude toward risk. Respondents were asked to indicate which of five statements came closest to describing the amount of

financial risk they are willing to take. Responses included from "take substantial financial risks" (coded 5) "take above average risks" (coded 4), "take average financial risks" (coded 3), "take below average risk" (coded 2) and "not willing to take any financial risks" (coded 1).

These variables were treated as covariates, potentially those factors that needed to be controlled while the relationships between the types of debt and the debt ratio measures of risk were examined. In previous work, these variables have been the subject of researchers' substantive concern and each has been found to relate to some measure of newlyweds' debt status. Thus, they were controlled in the interest of isolating the effects of type of debt on couples' debt risk.

Data Analysis

Descriptive data are presented on the eight types of debt, both for the total sample and separately for couples with each type, and for the three measures of debt risk, solvency, liquidity, and debt repayment ratios. Multiple discriminant analysis was used to assess the efficacy of the types of debt in discriminating between the couples at risk vs. not at risk for debt difficulty (Hair, Anderson & Tatham, 1987; Klecka, 1980; Tabachnick & Fidell, 1983). First, all of the variables representing need for borrowing, ability to obtain credit, and willingness to borrow, as well as the variables representing the seven types of debt were entered into each discriminant analysis. Then, a reduced model was derived for each measure of debt risk, including those variables that were significant at $p < .10$ or better; these results are presented. Discriminant analysis is a multivariate statistical technique that estimates the partial effect of each independent variable on a discrete dependent variable. It estimates an equation based on maximizing the separation between the group centroids of the subjects categorized on the dependent variable (in this case, the measure of debt risk). The hit ratio reflects the success of the equation in predicting actual group membership on the dependent variable.

Results

Table 1 describes the consumer and total debt distributions of the sample and the measures of newlywed couples' debt difficulty. Consumer debt includes all debt except mortgages and home equity loans. About 12% of couples had no consumer debt, but over 15% of couples had \$20,000+ of consumer debt. The mean amount of consumer debt held by newlyweds was over \$10,000 and the median (that best illustrates the

"typical" newlywed couple's consumer debt load) was almost \$5900. The mean total debt of newlywed couples was slightly over \$30,000, but the large standard deviation indicates that there was much diversity in debt load within the sample. The median total debt of \$9,200 more likely typified the "average" newlywed couple, although it must be recognized that a substantial number of couples had very high debt. Note that this measure includes the amount of mortgage debt for those 64 couples (26.4%) who had a mortgage loan. Fewer than one in ten newlywed couples had no debt of any type.

Depending upon the measure of debt risk used, the fraction of the sample judged to be at risk differs. If the standard is having a debt/asset ratio of at least .70, then about one-quarter (23.7%) of newlywed couples may be at risk for insolvency. At the other extreme, about 20% of couples had very little debt relative to their assets (a ratio of < .10). The median of .35 indicates that the typical newlywed couple was in average shape in terms of their ability to handle declines in their asset values.

Couples' liquidity ratios reveals that over one-fourth of newlywed couples had less than six months' worth of current debt coverage available in liquid assets (a liquidity ratio of < .50). Another 8.7% had average liquidity ratios of between six months' and one year's worth of debt coverage. So, when we use the criteria that couples have an amount of liquid assets lower than their current debt balances, over one-third (36%) of couples may be at risk if they suffer a decline in their ability to pay current debt from income. The remaining newlywed couples (64%) had good liquidity in that they could pay at least a full year's worth of their current debts with their available liquid assets.

Using the standard of monthly debt repayment risk of 20% or more of their income, over one-third the newlywed couples (34.3%) met the criteria, indicating their monthly debt service may be putting a strain on their resources or constraining their present consumption and saving. About one-fourth of couples had a ratio of between .20 and .39, a dangerous level of debt repayment in relation to their incomes. Another one-tenth of the couples had very high levels of debt repayment, at least 40% of their available income. The median debt repayment ratio of .14 indicates that the typical newlywed couple allocated about 14% of their monthly income on old debt payments.

Newlywed couples varied substantially in their debt portfolios (Table 2). The types of debt held by the largest

proportions of newlywed couples were credit card debt and automobile loans, each of which was held by a majority of the couples. About one-third of couples had some amount of other debt and about one quarter of couples had some outstanding bills and held a mortgage. Fewer than one-fifth of couples had charge account debt outstanding and any installment debt (other than auto loans). One-quarter of couples had mortgages and very few couples had home equity debt outstanding.

As is obvious from the differences between the mean amounts of debt and the median amounts for couples who have each type of debt, the debt distributions were skewed. For each type of debt, there were some families who had very large amounts of debt outstanding, resulting in mean values that were higher than the medians in each case except home equity debt. Among the types of consumer debt, the highest levels of debt were reported for automobile debt, other debt, and installment debt. Although the highest percentage of families reported that they had credit card debt, the median outstanding balance due on their cards was \$1250, which was only the fourth highest amount of consumer debt for the typical couple.

Table 1
Measures of newlywed couples' debt

Measure of debt	n	% ^a
Consumer debt (n=242)		
\$ 0	28	11.6
\$ 1 - 999	26	10.7
\$ 1,000 - 4,999	57	23.6
\$ 5,000 - 9,999	46	19.0
\$ 10,000 - 19,999	47	19.4
\$ 20,000 - 29,999	20	8.3
\$ 30,000 - 39,999	10	4.1
\$ 40,000+	8	3.3
Mean = \$10,871	s.d. = \$21,645	Median = \$5,875
Total debt (n=242)		
\$ 0	23	9.5
\$ 1 - 999	22	9.1
\$ 1,000 - 4,499	47	19.4
\$ 5,000 - 9,999	33	13.6
\$ 10,000 - 24,999	45	18.6
\$ 25,000 - 49,999	21	8.7
\$ 50,000 - 74,999	16	6.6
\$ 75,000 - 99,999	17	7.0
\$ 100,000+	18	7.4
Mean = \$30,238	s.d. = \$52,184	Median = \$9,200
Solvency ratio (n=241)		
0	24	10.0
.001 - .09	44	18.3
.10 - .29	38	15.8
.30 - .49	41	17.0
.50 - .69	37	15.3
.70 - .99	32	13.3
1.00+	25	10.4
Mean = .48	s.d. = .57	Median = .35
Liquidity ratio (n=242)		
0	6	2.5
.01 - .49	60	24.8
.50 - .99	21	8.7
1.00 - 1.99	78	32.2
2.00 - 3.99	23	9.5
4.00 +	54	22.3
Mean = 3.48	s.d. = 5.56	Median = 1.00
Debt repayment ratio (n=242)		
0	28	11.8
.01 - .09	60	25.3
.10 - .19	66	27.9
.20 - .39	58	24.5
.40 - .59	14	5.9
.60 +	11	4.6
Mean = .19	s.d. = .24	Median = .14

^a Percentages may not add to 100.0 because of rounding

Table 2
Newlywed couples' debt portfolios

	Total Sample		Couples with type of debt	
	Mean	% with type	Mean balance	Median balance
<i>Consumer debt</i>				
Outstanding bills (standard deviation)	369 (1,242)	27.3	1,274 (\$2,054)	508
Credit card debt (standard deviation)	1,341 (2,277)	59.4	2,134 (2,563)	1,250
Charge account debt (standard deviation)	112 (430)	18.8	565 (829)	247
Installment loans (standard deviation)	906 (3,124)	19.5	4,384 (5,696)	2,000
Automobile loans (standard deviation)	4,682 (7,005)	51.2	8,648 (7,511)	7,000
Other debt (standard deviation)	3,462 (19,462)	31.6	10,343 (32,696)	2,500
<i>Mortgage debt</i>				
Home mortgage loans (standard deviation)	18,988 (43,174)	25.0	71,797 (\$7,260)	61,750
Home equity debt (standard deviation)	380 (3,856)	2.3	15,321 (21,022)	7,500

(n=256)

^aOther debt includes educational debt, medical debt, and debt to family and friends.

Discriminant analyses of couples' debt risk

Table 3 shows the results of the discriminant analysis for those couples at risk for insolvency according to their debt/asset level. Three types of debts--charge account debt, automobile debt, and other debt--discriminated between those at risk and those not at risk. The standardized discriminant function coefficients (not shown) reveal the relative importance of the included variables at distinguishing between the risk groups. Having other debt (including educational and medical debt) was particularly important in distinguishing between the risk groups. Proportionately, twice as many couples in the at risk group had some amount of other debt as did the newlywed couples not at risk. Auto debt was next most important; almost three-quarters of the at risk newlywed couples had outstanding auto debt, some of them very high levels of this type of debt. Note that the other types of debt, including credit cards, outstanding bills, installment loans and mortgages, were

not significant in distinguishing newlywed couples at risk for insolvency from other couples.

Table 3
Discriminant analysis of solvency risk of newlywed couples

	At risk (n=52)	Not at risk (n=162)	F	sig.
<i>Need to borrow</i>				
Income adequacy	3.21	3.62	7.92	<.01
Income certainty	3.85	4.13	2.83	<.10
<i>Willingness to borrow</i>				
Attitude toward planning	12.58	13.02	2.61	<.10
Feelings of control	11.00	10.14	3.72	<.05
<i>Debt portfolio</i>				
Has charge account debt(s)	0.33	0.17	6.31	<.01
Has auto debt(s)	0.73	0.49	9.73	<.01
Has other debt(s)	0.54	0.26	14.77	<.001
Percent classified by discriminant function as:				
At risk	71.1		27.2	
Not at risk	28.9		72.8	
Overall hit ratio=72.4%				

In terms of the other predictors of debt difficulty potentially available as control variables, two measures of need to borrow also were significant in the final analysis--income adequacy and income certainty. Couples at risk for insolvency reported that they felt that their incomes were less adequate and less certain than did other couples. Two measures of willingness to borrow also differentiated between the groups. Couples at risk for debt difficulty had attitudes less accepting of the need for future planning and felt less in control of their lives than did couples not at risk. The overall hit ratio for this analysis (the percentage of couples correctly classified by the discriminant analysis) was 72%, substantially better than the classification by chance.

The discriminant analysis for the liquidity risk of newlywed couples is shown in Table 4. Here, five different types of debt--bills, credit card debt, charge

account debt, installment and mortgage debt, differentiate between those at risk of illiquidity from those not at risk. Particularly large are the differences in the proportion of couples who have bills outstanding (44% of at-risk couples have them compared to only 21% of couples not at risk) and those with installment debt (39% in the at-risk group versus 10% of other couples). It appears that a primary concern here may be the number of different types of debts that at-risk couples hold.

Several variables made available as potential covariates were also significantly related to the liquidity risk of newlyweds. Again, spouses' subjective income adequacy differentiated the at-risk group from their peers. Two measures of ability to obtain credit, gross income and number of sources of income, also were significant. Couples at risk for illiquidity had lower average incomes by almost \$7000 and had fewer sources of income, as compared to couples with high liquidity ratios. Attitudes toward credit and feelings of control also significantly distinguished between the groups. Couples at risk for illiquidity had more liberal attitudes about the acceptability of using credit and felt less in control of their lives than did their peers with better liquidity. The overall hit ratio of 78.1% is the best classification success of any of the three analyses.

The analysis for the newlyweds' debt repayment risk is shown in Table 5. Having two types of debt, automobile debt and other debt, was significantly related to membership in the at-risk group versus the group with no debt repayment risk. Other debt includes medical debt, educational debt, and debt to family and friends. Twice as many couples in the at risk group (54%) have this type of debt as in the group not at risk (26%); having this debt had the strongest ability to differentiate the two groups of couples of any type of debt. Additionally, automobile debt was marginally statistically significant ($p < .10$) in its effects on debt repayment risk. Note that these two types of debt were also significant in the analysis for risk of insolvency. None of the other types of debt were associated with risk of difficulty in debt repayment.

Table 4
Discriminant analysis of liquidity risk of newlywed couples

	At risk (n=80)	Not at risk (n=135)	F	sig.
<i>Need</i>				
Income adequacy	3.18	3.73	19.63	<.001
<i>Ability</i>				
Gross income	30,594	37,130	4.34	<.05
Number of income sources	2.78	3.57	13.67	<.001
<i>Willingness</i>				
Attitudes toward credit	4.49	4.08	3.39	<.10
Feelings of control	10.75	10.08	2.82	<.10
<i>Debt portfolio</i>				
Has bills	0.44	0.21	13.53	<.001
Has credit card debt(s)	0.76	0.57	8.30	<.01
Has charge account debt(s)	0.28	0.16	3.91	<.05
Has installment debt(s)	0.39	0.10	29.52	<.001
Has mortgage debts(s)	0.18	0.31	4.90	<.05
Wilks' lambda=0.63, F-value=4.22 (p<.001)				
Percent classified by discriminant function as:				
At risk	76.3		20.8	
Not at risk	23.8		79.3	
Overall hit ratio=78.1%				

In terms of the potential control variables, only the traditional measures of credit worthiness, age, income, number of income sources, and husbands' training in financial management, were significant covariates in this analysis. Compared to other couples, newlywed couples whose debt repayment risk was high were more often younger, had lower incomes as well as fewer sources of income, and included husbands who were less likely to have had any financial management training. This hit ratio suggests that this analysis correctly classified 68.2%

of couples into their risk group, making it the least successful of the three analyses.

Table 5
Discriminant analysis of debt repayment risk of newlywed couples

	At risk (n=77)	Not at risk (n=137)	F	sig.
<i>Need</i>				
Age	24.9	25.9	2.79	<.10
Gross income	28,766	39,005	11.13	<.001
Number of income sources	2.99	3.49	5.15	<.05
Husband's training	0.16	0.28	4.11	<.05
<i>Debt portfolio</i>				
Has auto debt(s)	0.73	0.49	2.87	<.10
Has other debt(s)	0.54	0.26	5.72	<.001
Wilks' lambda=0.81, F-value=1.72 (p<.05)				
Percent classified by discriminant function as:				
At risk	71.4		33.6	
Not at risk	28.6		66.4	
Overall hit ratio=68.2%				

SUMMARY

THE TYPICAL NEWLYWED COUPLES IN THIS SAMPLE DID NOT BEGIN THEIR MARRIED LIFE WITH A CLEAN DEBT SLATE AROUND 90% OF NEWLYWED COUPLES HAD AT LEAST ONE TYPE OF DEBT, MEANING THAT FEWER THAN ONE IN TEN COUPLES WAS COMPLETELY DEBT-FREE NOR ARE NEWLYWEDS WHILE HOMOGENEOUS IN TERMS OF STAGE IN THE FAMILY LIFE CYCLE HOMOGENEOUS WITH RESPECT TO THEIR DEBT PORTFOLIOS WHILE ALMOST THREE-FIFTHS HAD SOME CREDIT CARD DEBT (THE MOST PREVALENT TYPE OF DEBT) FEWER THAN 3% HAD HOME EQUITY DEBT AND FEWER THAN ONE-FIFTH HAD CHARGE ACCOUNT DEBT OR INSTALLMENT DEBT OTHER THAN AN AUTOMOBILE LOAN).

WE USED THREE DEBT RATIOS—A SOLVENCY RATIO, A LIQUIDITY RATIO, AND A DEBT REPAYMENT BURDEN RATIO—MEASURED THE DEBT RISK OF NEWLYWED COUPLES WHILE THE MEDIANS ON THESE MEASURES INDICATE THAT THE TYPICAL NEWLYWED

COUPLE IS IN A RELATIVELY SAFE POSITION WITH RESPECT TO THEIR DEBT, THERE IS A GROUP OF NEWLY WED COUPLES WHO ARE CLEARLY AT RISK FOR DEBT DIFFICULTY. DEPENDING ON THE MEASURE OF DEBT RISK USED, FROM ALMOST ONE QUARTER TO OVER ONE THIRD OF COUPLES MAY BE AT RISK. EITHER 23% (SOLVENCY RATIO), 35% (DEBT REPAYMENT RATIO), OR 36% (LIQUIDITY RATIO) OF NEWLY WED COUPLES COULD ALREADY HAVE EXPERIENCED DEBT DIFFICULTY OR MAY DO SO IN THE FUTURE, PARTICULARLY IF THEIR ASSETS DECLINE IN VALUE OR THEIR INCOMES OR EMPLOYMENT ARE VOLATILE OR SPORADIC.

THE TYPES OF DEBT DIFFERENTIATE BETWEEN COUPLES GROUPED ACCORDING TO RISK OF DEBT DIFFICULTY, PARTICULARLY CHARGE ACCOUNT DEBT, AUTO DEBT, AND OTHER DEBT (INCLUDING MEDICAL AND EDUCATION DEBT AND MONEY OWED TO FAMILY AND FRIENDS) WITH OTHER FACTORS THAT PLAUSIBLY AFFECT DEBT ACQUISITION CONTROLLED, EACH OF THESE TYPES OF DEBT SIGNIFICANTLY DISCRIMINATE BETWEEN AT RISK COUPLES AND OTHER COUPLES ON TWO OF THE MEASURES OF DEBT RISK. HAVING CREDIT CARD DEBT ONLY SIGNIFICANTLY PREDICTS LIQUIDITY RISK. SOME OF THE POPULAR INDICIMENT OF CREDIT CARDS AS A SIGNIFICANT CONTRIBUTOR TO DEBT DIFFICULTY OF FAMILIES MAY BE OVERSTATED AT LEAST IN SO FAR AS GEORGIA NEWLY WED COUPLES ARE CONCERNED.

TRADITIONAL MEASURES OF ABILITY TO ACQUIRE CREDIT, SUCH AS AGE AND INCOME, WERE SIGNIFICANTLY RELATED ONLY TO LIQUIDITY RISK AND DEBT REPAYMENT RISK. YOUNGER AND LOWER INCOME COUPLES WITH FEWER SOURCES OF INCOME WERE AT GREATER RISK FOR DEBT DIFFICULTY THAN OTHERS. INDICATORS OF WILLINGNESS TO ACQUIRE CREDIT, SUCH AS ATTITUDES TOWARD CREDIT, ATTITUDES TOWARD PLANNING, AND FEELINGS OF CONTROL, WERE SIGNIFICANTLY RELATED TO SOLVENCY RISK AND LIQUIDITY RISK. COUPLES AT RISK FOR ILLIQUIDITY HAD MORE LIBERAL ATTITUDES TOWARD CREDIT AND FELT LESS IN CONTROL OF THEIR LIVES THAN THEIR COUNTERPARTS WITH HIGH LIQUIDITY. THOSE AT RISK FOR INSOLVENCY FELT THAT PLANNING FOR THE FUTURE WAS LESS IMPORTANT AND FELT LESS IN CONTROL OF THEIR LIVES THAN THEIR COUNTERPARTS WITH LOW DEBT/ASSET RATIO.

NOTE THAT THESE RESULTS ARE GENERALIZABLE ONLY TO NEWLY WED COUPLES IN GEORGIA. FAMILIES OF DIFFERENT AGES AND MARITAL STATUS MAY BE DIFFERENT ENOUGH IN TERMS OF THE DEBT ACQUISITION AND REPAYMENT PROCESS SUCH THAT THESE FINDINGS MAY NOT APPLY. HOWEVER, EXAMINING COUPLES AT THE BEGINNING OF THEIR MARRIAGES MAY OFFER INSIGHTS THAT EXAMINING A CROSS SECTION OF

THE POPULATION MAY HAVE OBSCURED. IN THEIR REVIEW PAPER, DEVANEY AND LYTTON (1995) SUGGESTED IT IS IMPORTANT TO TEST MORE SOPHISTICATED MODELS OF FACTORS CONTRIBUTING TO INSOLVENCY AND THE USE OF FINANCIAL RATIOS TO HELP GUIDE DECISION MAKING ABOUT DEBT. KNOWING MORE ABOUT THE TYPES OF DEBT THAT COULD LEAD TO FUTURE DIFFICULTIES IS IMPORTANT FOR BOTH CONSUMERS AND CREDIT GRANTORS IN ORDER TO HELP EACH PLAY THEIR PARTS IN REDUCING FAMILIES DEBT DIFFICULTIES. SULLIVAN, WARREN & WESTBROOK (1989) FOUND THAT ONE OF THE ROOT CAUSES OF CONSUMER BANKRUPTICIES WAS THE IRRESPONSIBILITY OF PARTICULAR DEBTOR CREDIT DYADS IN OBTAINING, ON THE ONE HAND, AND BEING WILLING TO GRANT, ON THE OTHER, TOO MUCH DEBT OF CERTAIN TYPES (P. 332). IF MORE RESEARCH ON THIS ISSUE REPLICATES AND EXTENDS THE FINDINGS OF THIS STUDY, AND IF SUCH FINDINGS ABOUT THE RELATIONSHIP BETWEEN CHARACTERISTICS OF THE DEBT AND FAMILY DEBT DIFFICULTY CAN BE DISSEMINATED BOTH TO CONSUMERS AND TO CREDITORS, PERHAPS BOTH PARTS OF THE DYAD CAN BECOME MORE RESPONSIBLE.

IN PARTICULAR, COUPLES CONTEMPLATING MARRIAGE AND NEWLY WED COUPLES COULD BE COUNSELED USING THE FINDINGS FROM THIS STUDY. COUPLES AT PARTICULAR RISK FOR HAVING DIFFICULTY WITH SOME ASPECT OF THEIR DEBT MAY BENEFIT FROM SUCH KNOWLEDGE AND TAKE STEPS TO PREVENT OR MINIMIZE SUCH DIFFICULTY. IN ADDITION, CREDITORS, PARTICULARLY THOSE ISSUING CHARGE ACCOUNT, AUTO, AND OTHER DEBT, MAY NEED TO PAY PARTICULAR ATTENTION TO THEIR CREDIT GRANTING CRITERIA FOR NEWLY WED COUPLES.

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