

**What did they do with the money?  
An analysis of tobacco farmers' expenditure choices**

Maria I. Marshall  
Department of Agricultural Economics  
Purdue University

Helen Pushkarskaya  
Department of Agricultural Economics  
University of Kentucky

June 2007

*Selected Paper prepared for presentation at the American Agricultural Economics Association Annual Meeting, Portland, OR, July 28-August 1, 2007.*

Copyright 2007 by Maria I. Marshall and Helen Pushkarskaya. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

## **Abstract**

There are many expenditure options available to farmers who received a tobacco buyout check. We used a multinomial logit model to analyze how farmer, business, and household characteristics influenced the choice of expenditure option. We found statistically significant differences in the way farmers chose to spend their buyout money based on age, education, gender, and internet use. We also found that farmer optimism had a statistically significant impact on expenditure choice. Overall, our analysis suggests that it is important for policymakers to take into account this heterogeneity instead of treating all farmers as a homogeneous group of representative agents.

## **Introduction**

In November 2004, the U.S. Congress passed legislation eliminating the tobacco program. This action will force a major reorganization of the Kentucky economy as Kentucky is second only to North Carolina in terms of tobacco acreage and production. The six states with the most acreage are North Carolina, Kentucky, Tennessee, South Carolina, Virginia, and Georgia (USDA NASS, 2006). According to NASS (2001), 17 of the 20 most tobacco dependent counties in the US are in Kentucky. Thus, as one of the most tobacco-dependent states, Kentucky is particularly vulnerable to changes in the tobacco economy.

The buyout legislation was designed to prevent (or at least decrease) the recent continuous decline in net income for U.S. tobacco growers. This decline has resulted in depressed economic conditions for tobacco farmers and their tobacco-dependent rural communities. The tobacco buyout program was designed to compensate tobacco quota owners for the elimination of tobacco quota assets and to provide compensation and transition assistance to tobacco growers and their communities. However, farmers decide individually how are they

going to spend their tobacco quota and their expenditure decision depends on their age, education, on and off farm income, and overall lifestyle. Therefore, farmer heterogeneity has a big impact on the outcomes of the tobacco buy-out program.

Several studies have been conducted on the impact of the tobacco buyout program (Gale, 1999; Gale, Foreman, and Capehart, 2000; Beach, Jones, and Johnston, 2005; Brown, 2005; Snell, 2005; Beach et al. 2006). These studies predicted that tobacco farming would follow other commodity crops and make the change from many farms with small amounts of acreage to fewer farms with larger amounts of acreage. They have also predicted that the demographics of the tobacco farmer would change as older farmers exit the market. No studies however have investigated what tobacco farmers would actually do with their tobacco buyout checks. Will tobacco farmers diversify into other on or off-farm businesses? If it is true that older farmers will exit the market, then will they simply put the money in a retirement fund?

It has been suggested that tobacco farmers in Kentucky may start new businesses as an alternative to tobacco production and that this will revitalize rural economies. In addition, Fritsch (2004) found that individuals who receive an inheritance are more likely to start new businesses. In effect, several thousand Kentucky farmers have received an “inheritance” in the form of “buy-out checks.” Will this motivate farmers to start new businesses? These are important questions as the actions of these farmers have an economic impact on tobacco growing counties.

There are many expenditure options available to farmers who receive a buyout check. Farmers have to make a decision on how to spend the money in an environment where the old life style, i.e. dependence on the tobacco production, no longer seems to be a valid option; which should create incentives for farmers to act decisively and look quickly for alternative sources of income. However, the decision-making literature suggests that defensive evasion is a likely

response to difficult choices in the presence of time pressure (Dhar, 1997, Payne, Bettman and Johnson 1988, Beattie and Barlas 1992, Festinger 1964; Janis and Mann 1977). Will farmers choose to act quickly and aggressively invest in new on or off farm businesses, or will they instead choose to wait before making any decision or just pay off debts preparing for a clean start?

This paper reports on unique data from the on-going experiment in the Appalachian region. We surveyed 460 farmers in Kentucky in order to determine the choices made by tobacco farmers with their buyout checks. We found that the majority of buy-out recipients chose to pay-off debts (38%); a smaller percentage chose to invest in either retirement fund or in other financial assets (22%) or indicated they had not yet decided (23%); and the smallest portion of farmers chose to invest in an existing or new business (18%). Our analysis also suggests that personal characteristics, such as age, gender and level of education have a statistically significant impact on the individual's expenditure decision. In addition, the expenditure decision seems to be affected by important recent events in life, such as major illnesses; by propensity to access diverse sources of information, i.e. custom to use the internet to accumulate the information necessary for the decision making; and by individual perception of the business climate in the community.

The paper is built as follows. First, we review the relevant literature. Second, we describe the data and summary statistics. Third, we define the model and discuss reasons why individual expenditure options might be associated with personal attributes such as income, education, age, gender, marital status, and etc. We end by reporting and discussing our results, and identifying some possible policy implications.

## Literature Review

There is extensive literature related to how employees withdraw pension funds and the impact that decision process has on job change or retirement age (Warner and Pleeter, 2001; Atkins, 1986; Piacentini, 1990; Fernandez, 1992; Poterba, Venti, and Wise, 1995; Yakoboski, 1997; Hurd, Lillard and Panis, 1998). They have analyzed the ways in which separating workers spent their cash-out lump-sum pension settlements upon leaving. Piacentini (1990) reported that 40% of 1988 CPS respondents consumed at least a portion of their lump-sum distributions. High-income families and older individuals saved more and consumed less than low-income families and younger recipients.

Yakoboski et al. (1994); Poterba, Venti, and Wise (1995); and Korczyk (1996) documented that the most common items on which 1993 CPS respondents spent their cash-outs were (in decreasing order) savings accounts or other financial instruments, everyday expenses, debt repayments, and home loans. Small distributions were overwhelmingly spent on everyday expenses. Poterba, Venti, and Wise (1995) found that 1992 HRS respondents (aged 51-61) saved or invested about one-fourth of their cash-outs and consumed the balance. Yakoboski (1997) found that 50% of cash-out recipients had spent at least a portion of their distributions.

Our study complements this literature by analyzing individual expenditure choice in the case of “forced early retirement” of tobacco farmers. In particular, we investigated how farmers who received tobacco buyout checks chose among the following expenditure options: 1) pay off debt, 2) invest in an existing or new business, 3) invest in financial assets or retirement fund, or 4) undecided.

### *Defensive Avoidance*

A number of researchers studied how individuals choose between several alternatives. Rational theory of search suggests that the no-choice option should be chosen when none of the alternatives are seen as attractive, or when there are benefits to further searching (Karni and Schwarz, 1977). Psychological literature suggested that consumers may decide not to choose in order to avoid making difficult trade-offs (Tversky and Shafir, 1992; Beattie and Barlas, 1992; Festinger, 1964; Janis and Mann, 1977). Dhar (1997) suggests that the tendency to defer choice is greater when the difference in attractiveness among available alternatives is small.

Overall, the literature implies that a significant number of tobacco farmers might defer or postpone a decision on how to spend the buyout check. Moreover, we would expect that the same bias will cause a higher proportion of farmers to choose to payoff debts since it is a relatively passive option and allows individuals to have a fresh start. In this study we investigate what portion of farmers indicated that they have not yet decided what to do with the buyout money, and also what individual characteristics and other factors were significant for this group.

### *Gender Differences*

Several studies report observed differences in risk attitudes and risk perception of financial decisions between genders. Even though the underline mechanism is not clear, women demonstrate higher degree of risk aversion (Hinz, McCarthy, and Turner, 1996; Bajtelsmit and VanDerhei, 1996; Barsky et al, 1995). Jianakoplos and Bernasek (1996) reported that women also perceive themselves to be less inclined to risk-taking. The implication for is that women choose less risky investment choices and consequently lower return financial assets. We explored the possibility that gender may affect the expenditure decision.

## Data

This paper reports on unique data from an ongoing “natural experiment” in the Appalachian region. We surveyed 460 farmers in Kentucky in order to determine the choices made by tobacco farmers with their buyout checks. The data was collected during the summer of 2005 through the fall of 2006 when farmers just started to receive their first buyout checks. Two-hundred eighty-seven were tobacco farmers who had received a tobacco buyout check, of which, 256 were usable surveys. Variable names and descriptions are shown in Table 1.

-- Table 1 Here --

Sample descriptive statistics are shown in table 2. Farmers’ mean age was 55 years and 48% had at least a high school diploma. Sixteen percent of the farmers surveyed were women. Many of the farmers worked on the farm either full-time (50%) or part-time (33%). Twenty-one percent had a Bachelor’s degree and 22% had a graduate degree. Twenty-nine percent had children under 18 living at home and 11% had an income of less than \$30,000. Forty-six percent used the internet to find out information about the buyout program.

-- Table 2 Here --

Farmers could choose between two major categories of buyout check options: a lump-sum payment or 10 annual payments. Thirty-two percent chose the lump-sum option and 68% chose 10 annual payments. The mean buyout amount was \$106, 932. A majority of buy-out recipients choose to pay-off debts (38 %); a smaller percentage chose to invest in either a retirement fund or in other financial assets (22%) or indicate that they have not yet chosen (23%); and the smallest portion of farmers decided to invest in an existing or new business (18%).

## Model

According to economic theory, the decisions guiding an individual should be based on an assessment of the best alternative use of his/her resources. The individual will make a decision on which expenditure option to choose after examining the alternatives. The individual chooses an expenditure choice such that the level of utility derived from that choice is a maximized subject to the family and farm's resource constraints. Farmers were given a choice of 4 expenditure options: 1) pay off debt, 2) invest in an existing or new business, 3) invest in financial assets or retirement fund, or 4) undecided.

The underlying conceptual model describes the utility a farmer gains from choosing a particular expenditure choice:

$$U_{ji} = \beta_j X_i + e_{ji} \quad (1)$$

Where  $U_{ji}$  is the utility farmer  $i$  gains from choice  $j$ ,  $X_i$  is a vector of farmer, household, and business characteristics,  $\beta_j$  is the estimated coefficient, and  $e_{ji}$  is the error term. If a farmer makes choice  $j$ , then one can assume that the utility of choice  $j$  is the maximum among the  $J$  utilities of expenditure choice. Thus, the probability that a choice  $j$  is made, is  $Prob(U_j > U_k)$  for all  $k$  not equal to  $j$  (see Green, 2000).

We used a multinomial logit model to analyze how farmer, business, and household characteristics influenced the choice of expenditure option. Farmers had the choice of four expenditure options ( $Y_i$ ): pay off debt (*Debt*), invest in an existing or new business (*Business*), invest in financial assets or a retirement fund (*Invest*), or undecided (*Undecided*). The multinomial logit model is,

$$\text{Prob}(Y_i = j) = \frac{e^{\beta_j x_i}}{\sum_{k=1}^4 e^{\beta_k x_i}}, j = 1, \dots, 4, \text{ and} \quad (2)$$

$$\text{Prob}(Y_i = 0) = \frac{1}{\sum_{k=1}^4 e^{\beta_k x_i}}, j = 1, \dots, 4 \quad (3)$$

The estimated equations (2) and (3) provide a set of probabilities for the  $J+I$  expenditure choices of the farmer with the characteristics  $x_i$  (see Greene, 2000). Where,  $x_i$  is a set of farmer, business, and household characteristics and  $\beta$  are the estimated coefficients. In estimating the model, *Debt* is used as the reference alternative to which the remaining expenditure options (*Business*, *Invest*, and *Undecided*) are compared.

### *Effects of Individual Attributes*

#### Personal characteristics

Farmer characteristics included gender, age, education, on-farm employment status, internet use, and income. We would expect that males are more likely than females to invest in financial assets or to start or expand a business. We would expect older farmers to invest their buyout money in financial assets or a retirement fund to protect their approaching retirement, and more educated farmers to feel more comfortable about investing in the financial markets than less educated. We would expect farmers that work full-time on the farm and depend more heavily on the tobacco income to choose to start new or expand old businesses or pay off debt. We would also expect that lower income farmers have higher debts and are therefore more likely pay them off.

### Business characteristics

Business characteristics included acreage, buyout check amount, and buyout payment option. Fritsch (2004) found that individuals who receive an inheritance are more likely to start new businesses and in effect, farmers have received an “inheritance” in the form of a buy-out check. Consequently, we would expect that farmers who choose the lump-sum option are more likely to start a new business. We would expect farmers with large acreages to pay off debts since on average they are more likely to have higher debts. We would also expect that farmers who receive smaller checks are more likely to payoff debts than to invest in retirement fund, financial assets or a new or existing business.

### Household characteristics

Household characteristics included major life-cycle events that occurred in the previous three years such as having children return home, birth of a child, death, divorce, major illness, or retirement. We would expect farmers that experienced a major illness, death, divorce, or retirement in the household, had to bear significant expenses in the near past and therefore are likely to choose to pay off debt.

### Perception of business climate in the community

Farmer characteristics also included an optimism index. The optimism index reveals how the individual farmer feels about the success of entrepreneurship in their community. The optimism index was a combination of four questions which asked farmers to rate on a scale of 1 (many more) to 5 (far fewer), whether in their opinion businesses in 1) the rural US, 2) in Kentucky, 3) in rural Kentucky, 4) in their community fail more than the standard 80% within 5

years. The optimism index also includes whether the farmer believed he/she would have to move out of their community in order to start a new business. We would expect farmers with a high optimism index to perceive their chances of starting a viable business to be high; thus, they would choose to start or expand a business over paying off debt with their buyout money.

Specifically, based on the above discussion we formulated a list of testable hypotheses:

*Hypothesis 1: Female farmers are less likely than male farmers to choose to invest in financial assets or a retirement fund (Invest).*

*Hypothesis 2: Younger farmers are less likely than older farmers to choose to invest in financial assets or a retirement fund (Invest).*

*Hypothesis 3: Farmers who experienced a divorce are more likely to choose to pay off debt (Debt) than those who did not.*

*Hypothesis 4: Farmers with a high optimism score are more likely to choose to start or expand a business (Business) than farmers with a low optimism score.*

## **Results**

We used LIMDEP (2002) to estimate a multinomial logit model in order to evaluate Kentucky farmers' use of their tobacco buyout money. Farmers were given four expenditure choices that included paying off debt (*Debt*), investing in an existing or new business (*Business*), investing in financial assets or a retirement fund (*Invest*), or undecided (*Undecided*). The results of the multinomial logit model are shown in table 3.

-- Table 3 Here --

We found education to be a factor in expenditure selection. Having a Bachelor's degree (*BS*) was positive and statistically significant at the 10% level for *Business* and *Invest*. This result

indicates that farmers with a Bachelor's degree are more likely to choose to start or expand a business or invest in financial assets or a retirement fund than to pay off debt with their buyout money. In fact, a Bachelor's degree makes farmers 10% more likely to choose *Business* and 11% more likely to choose *Invest*. On the other hand, it makes farmers 22% less likely to choose *Debt*. Probabilities for variables of interest are shown in table 4.

-- Table 4 Here --

Gender was a positive and statistically significant factor for *Undecided*. *Female* was statistically significant at the 1% level. Women are more likely than men to choose *Undecided* over *Debt* as an expenditure option. According to our probabilities, women are 20% more likely to choose *Undecided* and 15% less likely to choose *Debt*. Interestingly, women are 7% more likely than men to choose *Business*. However, women are 12% less likely than men to choose *Invest* which is consistent with hypothesis 1.

Age was a negative and statistically significant influence on expenditure selection. *Age1* (<46) and *Age2* (46-64) were statistically significant at the 1% level for *Invest*. Younger farmers are less likely than older farmers (those over 64 years old) to invest in financial assets or a retirement fund with their buyout money. In fact, farmers less than 46 years old were 27% less likely than those over 64 years old to choose *Invest*; while farmers 46-64 years old were 16% less likely. However, younger farmers are more likely to choose *Debt* as an expenditure choice than older farmers. The younger the farmer the more likely he/she is to choose to pay off debt and the less likely he/she is to invest in financial assets or a retirement fund, which is consistent with hypothesis 2.

Internet use was negative and statistically significant at the 5% level for *Business*. Farmers that used the internet to obtain information on the buyout program are less likely to

choose *Business* as an expenditure option. They are 15% less likely to choose *Business* but 2% and 12% more likely to choose *Invest* and *Undecided*, respectively.

Life-cycle events and household disruptions may influence how individuals decide to spend their income. *Major illness* was positive and statistically significant at the 10% level. We found that farmers who suffered a major illness in their household were more likely to remain undecided on ways to spend their buyout money. Interestingly, those who suffered a major illness in the household are more likely (8%) to choose *Undecided* and 11% less likely to choose *Debt* than those who did not suffer a major illness. The variable *divorce* was not statistically significant for any expenditure option; thus, hypothesis 3 was rejected.

Farmers' optimism had a positive and statistically significant impact on expenditure choice. The optimism index was statistically significant for *Business* and *Undecided* at the 1% and 10% levels, respectively. The more optimistic the farmer the more likely he/she is to choose to start or expand a business, which is consistent with hypothesis 4. For every one unit increase in optimism, there is a 2% increase in the probability a farmer will invest in an existing or new business and a 1% increase in the probability that he/she will be undecided.

## **Discussion and Conclusions**

We use a multinomial logit model to estimate the relationship between Kentucky farmers' expenditure choices and farmer, household, and business characteristics. In other words, how Kentucky tobacco farmers spent their tobacco buyout money. Farmers were given four expenditure choices that included paying off debt; investing in an existing or new business; investing in financial assets or a retirement fund; or undecided.

### *Overall distribution of choices across the expenditure options*

Twenty-three percent of farmers indicated they had not decided how to spend the buyout check. This is consistent with “a defensive avoidance” bias. The majority of respondents (38%) chose to pay off debts, which also could be explained by “defensive avoidance”. This percentage should decrease as more time passes by and a second wave of the survey, if conducted 3-4 years after the buyout checks were first distributed, can test this hypothesis. An alternative explanation is that farmers expect to have higher returns on early debt payoffs than on any other investments, which might be true for personal credit cards with annual percentage rate at 19-30% a year, but might not be reasonable for farmers with loans at the annual percentage rate of 6-8%.

From a policy perspective a possible presence of a defensive avoidance bias implies that farmers are likely to go through a period of adjustment before they switch from passive expenditure choices to new more active choices such as diversification or new business activities; and therefore need more assistance with decision making in the initial stage. Moreover, since this bias seems to affect women more than men, women might need more assistance during the transition period. Major illness, one of the most significant household disruptions, seems to make individuals more susceptible to defensive avoidance bias, and possibly defines one more market segment for targeted education. Having a bachelor degree showed a positive, although not very strong (10% significance), effect on a probability of choosing to invest in financial assets and new and existing business activities, which might indicate that proper education programs can offset a defensive avoidance bias.

### *Factors that affected farmers' individual choices*

We speculated that many personal characteristics could affect individual expenditure choices. However, our analysis revealed that only a few were statistically significant factors. Among them are age, education, internet use, and individual perception of business climate in the community. We did not sub-characterize farmers as growers or owners, since the main focus was on overall distribution of tobacco farmers' expenditure choices.

Farmer age had a statistically significant impact on the probability of investing in financial assets or retirement fund. The younger the farmer the more likely he/she is to choose to pay off debt and the less likely he/she is to invest in financial assets or a retirement fund. We expected that older farmers are more likely to invest in a retirement fund and in other financial assets, and the data supported this hypothesis. We also speculated that younger farmers are more likely to invest in new business activities, but data suggests that they are more likely to pay off debts. A possible explanation is that younger farmers may still be paying off mortgages, student loans, or business start-up loans. Younger farmers may also have higher debts because of their lower incomes.

Education had a weakly significant effect on individual expenditure choices, i.e. farmers who obtained a bachelor's degree are more likely to invest in existing or new business activities and in financial assets or a retirement fund. If the goal of policy makers is to increase the number of farmers who choose to invest in new business activities, then, the data suggests, they may want to target outreach activities toward college educated farmers as an economic development policy.

Internet usage had a negative effect on an individual's choice to start a new business, and it is a somewhat unexpected result. A positive perception of the business environment in the

community had a positive effect on an individual's choice to start a new business, which is as expected. For policy makers, it implies that a program to support not only the entrepreneurial activities of buyout checks recipients, but also an entrepreneurial community culture might be an effective policy tool.

The data we analyzed was collected during the period from summer 2005 to fall 2006 when farmers just started to receive their first buyout checks. We expect that over time, distribution of choices over expenditure options will change as farmers have more time to evaluate their alternatives and a new economic reality. Specifically, we expect that people will move away from the “*Undecided*” category and towards the “*Business*” category. We plan to re-interview the same respondents in 3-4 years and analyze the dynamics of their expenditure choices as well as factors that influence it.

## References

Atkins, G.L.; 1986. "Spend it or Save it? Pension Lump Sum Distributions and Tax Reform."

Washington, D.C.: Employee Benefit Research Institute.

Bajtelsmit, V. and A.VanDerhei; 1996. "Why Do Women Invest Differently Than Man"

*Financial Counseling and Planning*, 7: 1-10

Barsky, R.B., Juster, F.T., Kimball, M.S., and M.D. Shapiro; 1995. "Preference Parameters and

Behavioral Heterogeneity: An Experimental Approach In The Health And Retirement

Study." *The Quarterly Journal of Economics*, 112(2): 537-579

Beach, R.H., Jones, A.S., and S.A. Johnston; 2005. "Tobacco Farmer Interest and Success in

Diversification." *Annual Meeting of the American Agricultural Economics Association*.

- Beach, R.H., Jones, A.S., Austin, W.D., and E.C. Crankshaw; 2006. "Tobacco farmer attitudes towards tobacco manufacturers: Divergence of interests in a rapidly changing market?" *American Public Health Association Annual Conference*.
- Beattie, J. and S. Barlas; 2001. "Predicting Perceived Differences in Tradeoff Difficulty." *Conflict and Tradeoffs in Decision Making*, Eds: Weber, Baron, and Looms, Cambridge Press.
- Brown, A. B.; 2005. "Outlook and Situation." *Burley Tobacco, 2005 Information*, North Carolina Cooperative Extension Service Publication, AG-376:1-5
- Dhar, R.; 1997. "[Consumer Preference for a No-Choice Option.](#)" *Journal of Consumer Research* , 24(2): 215-231.
- Fernandez, P.;1992. "Pre-retirement Lump Sum Distributions" *Trends in Pensions* Eds. John Turner and Daniel Beller. Washington, D.C.: U.S. Dept. of Labor, PWBA.
- Festinger, L.; 1964. "Conflict, Decision, and Dissonance." Stanford University Press.
- Fritsch, M.; 2004. "Entrepreneurship, entry and performance of new business compared in two growth regimes: East and West Germany," *Journal of Evolutionary Economics*, 14(5): 525-542.
- Gale, F.; 1999. "Tobacco communities facing change." *Rural Development Perspectives*, 14: 36-43.
- Gale, H.F., Foreman, L. and T. Capehart; 1999. "US Tobacco Farming Trends." Washington, DC: Economic Research Center, US Department of Agriculture.
- Capehart, T.; 2000. "Tobacco and the. economy: Farms, jobs and communities." *Agricultural Economic Report. No. 789*, Washington, DC: U.S

- Greene, W.H. 2000. "Econometric Analysis." 4<sup>th</sup> edition. Prentice-Hall, Inc. Upper Saddle River, New Jersey.
- \_\_\_\_\_. 2002. *LIMDEP Version 8.0*. Australia: Econometric Software, Inc.
- Hinz, R.P., McCarthy, D. D. and J. A. Turner; 1997. "Are Women Conservative Investors? Gender Differences in Participant Directed Pension Investments." In Gordon, M.S., Mitchell, O. S. and M. M.Twinney, eds., *Positioning Pensions for the Twenty-First Century, Philadelphia, Pa.: The Pension Research Council*;
- Hurd, M. D., Lillard, L. and C. Panis; 1998. "An Analysis of the Choice to Cash Out Pension Rights at Job Change or Retirement." *RAND Working Paper 1979-DOL*. Santa Monica, Calif.: RAND.
- Janis, I.L. and L. Mann; 1977. "Decision Making: A Psychological Analysis of Conflict, Choice and Commitment." New York, Free Press.
- Jianakoplos, N. A. and A. Bernasek, 1996. "Are Women More Risk Averse?" *Economic Inquiry*, XXXVI(4): 620-630.
- Karni, E. and A. Schwarz; 1977. "Search Theory: The Case of Search with Uncertain Recall." *Journal of Economic Theory*,16: 38–52.
- Korczyk, S. M.; 1996. "Pre-Retirement Pension Distributions in the Health and Retirement Study." *Public Policy Report No. 9609*. Washington D.C.: American Association of Retired Persons.
- Payne, J.W., Bettman, J.R., and E.J. Johnson; 1988. "Adaptive Strategy Selection in Decision Making." *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 14: 534-552.

- Piacentini, J. S.; 1990. "Preservation of Pension Benefits." *EBRI Issue Brief*, 98. Washington DC: Employee Benefit Research Institute.
- Poterba, J. M., Venti, S. F. and D.A. Wise; 1998. "Lump-Sum Distributions from Retirement Saving Plans: Receipt and Utilization." *Inquiries in the Economics of Aging*, ed. David A. Wise, 85-105. Washington, D.C.: National Bureau of Economic Research.
- Snell, W.; 2005. "The Buyout: Short-Run Observations and Implications for Kentucky's Tobacco Industry". *University of Kentucky cooperative extension services, 2005*.
- Tversky, A., and E. Shafir; 1992. "The disjunction effect in choice under uncertainty." *Psychological Science*, 3: 305-309.
- USDA NASS; 2006. "Statistical Highlights of US Agriculture, 2005-2006."  
[http://www.nass.usda.gov/Publications/Statistical\\_Highlights/2006/lvstkindex.htm](http://www.nass.usda.gov/Publications/Statistical_Highlights/2006/lvstkindex.htm)
- Warner J.T. and S. Pleeter; 2001. "The Personal Discount Rate: Evidence from Military Downsizing Programs." *The American Economic Review*, 91(1): 33-53.
- Yakoboski, P., Fronstin, P., Snider, S., Reilly, A., Scheer, D., Custer, B. and S. Boyce; 1994. "Employment-based Retirement Income Benefits: Analysis of the April 1993 Current Population Survey." *EBRI Issue Brief* 153. Employee Benefit Research Institute, Washington DC.
- Yakoboski, P.; 1997. "Large Plan Lump sums: Rollovers and Cashouts." *EBRI Issue Brief* 188. Employee Benefit Research Institute, Washington, DC.

Table 1. Variable names and descriptions

Variable	Description
Acres Raised	Number of acres raised
Buyout Amount	Dollar amount received from buyout program
Lump Sum	Lump sum option =1; 0 otherwise
Female	Female =1; 0 otherwise
Full-time	Works full-time on farm=1; 0 otherwise
Part-time	Works part-time on farm=1; 0 otherwise
High School	Has high school diploma=1; 0 otherwise
Some College	Has some college=1; 0 otherwise
BS	Has BS degree=1; 0 otherwise
Graduate	Has graduate degree=1; 0 otherwise
Age1	Farmer is less than 46 years old=1; 0 otherwise
Age2	Farmer is between 46 and 64 years old=1; 0 otherwise
Age3	Farmer is older than 64 years old=1; 0 otherwise
Children	Has children under 18 at home=1; 0 otherwise
Income	Has income less than \$30,000=1; 0 otherwise
Death	Experienced death in last 3 yrs=1; 0 otherwise
Divorce	Experienced divorce in last 3 yrs=1; 0 otherwise
Major Illness	Experienced major illness in last 3 yrs=1; 0 otherwise
Retirement	Experienced retirement in last 3 yrs=1; 0 otherwise
Internet	Used internet to access buyout information=1; 0 otherwise
Optimism Index	Index of optimism regarding entrepreneurship opportunities
<hr/>	
Expenditure Choices:	
Debt	Pay off debt (reference option)
Business	Start or expand a business
Invest	Invest in financial assets or retirement Fund
Undecided	Undecided

Table 2. Descriptive statistics for Kentucky tobacco farmers (N=256)

Variable	Mean	Standard Deviation
Acres Raised	12.25	23.01
Buyout Amount	106,932.29	176,658.87
Age	54.71	14.44
Optimism Index	9.59	3.34
	Frequency	Percent
Lump Sum Option	82	32
10 Annual Payments Option	174	68
Female	42	16
Age1 (Less Than 46 Years Old)	65	25
Age2 (46 to 64 Years Old)	134	52
Age3 (More Than 64 Years Old)	57	22
On Farm Full-time	127	50
On Farm Part-time	84	33
No High School	21	8
High School	65	25
Some College	60	23
BS Degree	53	21
Graduate Degree	57	22
Children	73	29
Income	28	11
Death	89	35
Divorce	20	8
Major Illness	76	30
Retirement	25	10
Internet Use	117	46
<i>Expenditure Choices</i>		
Debt	96	38
Business	45	18
Invest	57	22
Undecided	58	23

Table 3. Multinomial logit results for Kentucky farmers' expenditure choice

Variable	Business	Invest	Undecided
Acres Raised	-0.004 (0.015)	-0.006 (0.016)	0.009 (0.012)
Buyout Amount	-0.000001 (0.000002)	0.000002 (0.000002)	0.000001 (0.000002)
Lump Sum	0.701 (0.453)	0.599 (0.435)	0.477 (0.402)
Female	0.892 (0.595)	-0.176 (0.620)	1.452 (0.515)***
Full-time	0.224 (0.619)	-0.549 (0.567)	0.032 (0.585)
Part-time	-0.342 (0.631)	-0.618 (0.562)	0.00006 (0.579)
High School	-0.794 (0.889)	-0.556 (0.726)	0.450 (0.934)
Some College	1.242 (0.816)	0.280 (0.736)	0.967 (0.944)
BS	1.413 (0.828)*	1.316 (0.741)*	0.759 (0.987)
Graduate	0.640 (0.826)	0.156 (0.748)	1.016 (0.943)
Age1	-1.060 (0.741)	-2.385 (0.753)***	-0.856 (0.715)
Age2	-0.588 (0.593)	-1.410 (0.524)***	-0.643 (0.585)
Children	0.336 (0.568)	-0.723 (0.583)	0.551 (0.486)
Income	-0.498 (0.728)	-0.472 (0.687)	0.080 (0.598)
Death	-0.008 (0.441)	0.483 (0.403)	-0.128 (0.397)
Divorce	-0.0487 (0.705)	-0.550 (0.759)	-0.435 (0.759)
Major Illness	0.541 (0.455)	0.460 (0.436)	0.741 (0.410)*
Retirement	0.359 (0.689)	-0.261 (0.693)	0.325 (0.666)
Internet	-1.034 (0.474)**	0.065 (0.438)	0.560 (0.408)
Optimism Index	0.179 (0.066)***	0.029 (0.058)	0.109 (0.057)*
Intercept	-2.961 (1.186)***	0.007 (0.937)	-3.199 (1.169)***

The asterisks \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively. Log likelihood -290.495,  $\chi^2=107.268$ \*\*\*

Table 4. Probabilities for variables of interest on expenditure choice

Variable	Debt	Business	Invest	Undecided
Lump Sum	-11.47	4.89	4.12	2.47
Female	-14.83	6.88	-11.55	19.50
Full-time	2.29	4.89	-8.95	1.78
High School	1.04	-11.45	0.58	9.83
Some College	-15.98	11.26	-4.46	9.18
BS	-22.28	10.13	10.65	1.50
Graduate	-12.35	3.93	-4.09	12.52
< 46 Years	28.42	-1.15	-27.13	-0.14
46 to 64 Years	17.67	0.30	-15.67	-2.30
Divorce	7.38	3.06	-6.11	-4.33
Major Illness	-11.75	2.45	1.73	7.56
Internet	0.65	-15.41	2.86	11.90
Optimism Index	-1.98	1.77	-0.69	0.91