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How Will Tobacco Farmers Respond to the Quota Buyout? Findings from a Survey of North Carolina Tobacco Farmers

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Outline

- Study overview
- Background
- Data
- Farmer attitudes and expectations
 - Tobacco production
 - Buyout
- Expected tobacco production response to buyout
- Farmer attitudes
 - Tobacco control

Study Overview

- Develop survey and collect data from NC tobacco farmers on farm and household characteristics, tobacco production and marketing, and attitudes regarding various programs, policies, and entities affecting tobacco markets
 - Largest tobacco-producing state, about 40% of national production
- Evaluate tobacco farmer attitudes towards and interest in diversification into alternatives to tobacco
- Examine ability of tobacco farmers and tobacco-dependent communities to adjust to changes taking place
- Track changes in attitudes towards tobacco control policies over time
- Evaluate effectiveness of providing information about diversification opportunities and funding sources to tobacco farmers

Tobacco Quota and Price Support Programs

- Quota program with price supports was instituted in 1930s to limit production and keep prices up
- Farmers had to own or lease marketing quota to grow tobacco
 - Right to grow could not be transferred across county lines (except burley tobacco in TN)
- Contributed to making tobacco a very profitable crop
- Over past 30 years, US prices rose to about 50% higher than world price
 - Percentage of imported tobacco soared
- Quotas were cut by about 60% between 1997 and 2004
 - Number of farms growing tobacco dropped by 39% between 1997 and 2002

Tobacco Quota Buyout

- Removal of quotas and price supports will
 - Lower tobacco prices
 - Allow geographic relocation of production
- Expected to speed transition to fewer, larger tobacco farms
- Tobacco farmers and quota holders will receive buyout payments for the next 10 years to aid in transition, though top 20% of recipients are expected to receive about 80% of payments (EWG, 2005)

Data

- Panel survey of NC tobacco farmers drawn from 14 of the 15 highest-producing counties for flue-cured tobacco in the state
 - Fielded 1997, 1999, 2001, 2004 (and another round late '05-early '06)
- Combined with secondary data on market variables:
- Household Characteristics
 - Demographics (age, gender, race), education, tobacco use, treatment county
- Resources
 - Total acreage owned, tobacco acreage owned, share of household income derived from tobacco, indicator variables for married, children

Data (continued)

- Market Incentives
 - Expected tobacco revenue per acre, average county wage, indicator variable for proximity to urban county
- Risk and Uncertainty
 - County-level tobacco yield variance
- Variables for survey year to capture changes in tobacco quotas and other policies impacting tobacco production over time

Farmer Attitudes: Would You Advise Your Children to Grow Tobacco?

- Percentage that would advise their children to go into tobacco production dropped from 67% in 1997 to 21% in 2004
- Regression model shows highly significant and increasingly negative time effects, suggesting a large negative shift in attitudes towards the future of tobacco farming
[Table Logit attitudes.doc](#)
- Farm operators that were white, male, and married were less likely to advise their children to grow tobacco, as were those located in urban or adjacent counties
- Those with larger tobacco acreage grown and larger total acreage owned were more likely to advise their children to grow tobacco

Farmer Attitudes: Do You Expect to Exit Tobacco Production Other than Retirement?

- Regression model shows highly significant and increasingly positive time effects, indicating that there has been an increase in the proportion of farmers that expect to exit tobacco production
[Table Logit attitudes.doc](#)
 - Consistent with advice to children
- Age has a negative effect, as expected, because older operators are more likely to exit for retirement
- Attending at least some college increases the probability that growers expect to exit, which may indicate better off-farm opportunities
- Having children also increased probability of exit, while using tobacco products decreased expectations of exiting tobacco production
- Probability of exiting tobacco production decreased with tobacco acreage grown, though at a slower rate as acreage increased

Expectations of Buyout

- Tobacco manufacturers want to end tobacco program?
 - 64% agree or strongly agree in 1997, up to 89% in 2004
 - 28% disagree or strongly disagree in 1997, 7% in 2004
- Congress will eliminate the federal tobacco program?
 - 33% agree or strongly agree in 1997, 66% by 2001
 - 59% disagree or strongly disagree in 1997, 24% by 2001

Attitudes Towards Potential Buyout

- Respondents were increasingly in favor of a tobacco quota buyout over time, with over 70% supporting a buyout in the most recent survey
 - 64% favored a 50-cent cigarette tax increase if used to fund buyout
 - 76% favored FDA regulations if tied to buyout (28% if not tied to buyout)
- Nonetheless, respondents indicated that eliminating the tobacco program was a risk for tobacco farmers
 - About 66% of respondents indicated eliminating the program was a great risk, 19% some risk, 9% slight risk, and 7% indicated no risk

Intentions for Buyout Funds

	1999	2001	2004
Expand/diversify farm	55	48	89
Invest in another business	89	82	46
Invest in a retirement acct	179	182	161
Pay off debts	437	305	206
Retire	17	28	32
Other	28	37	130

Tobacco Production Intentions Following Potential Buyout

- When asked if they would continue growing tobacco if they had to sell at the world market price
 - 55% said they would not
 - 5% were unsure
 - 40% would continue growing
- When asked about acreage intentions if the federal program were ended:
 - 35% would stop growing tobacco
 - 39% would increase tobacco acreage
 - 21% would keep tobacco acreage the same
 - 4% would decrease tobacco acreage

Intentions Following Potential Buyout – cont'd

- However, intentions varied significantly with tobacco acreage grown
 - Only 22 percent of farmers growing 25 or more acres of tobacco plan to exit compared with 60 percent of farmers with less than 5 acres of tobacco
 - Almost half of all tobacco farmers with 25 or more acres planned to expand tobacco acreage following a buyout, while only 23 percent of those with less than 5 acres were planning to expand

Expected Tobacco Production Response

- Estimated Generalized Ordered Logit Regression Model with 4 categories for response to end of federal tobacco program:
 - Will no longer grow tobacco
 - Will reduce tobacco acreage
 - Will keep tobacco acreage the same
 - Will increase tobacco acreage
- Categories can be ranked in order
- Coefficients for this model show effects of model variables on the probability of being in that category or above vs. being in a lower category [Table_GOL_acreage.doc](#)

Expected Tobacco Production Response: Summary of Results

- Operator age has a negative effect and tobacco acreage has a positive effect across all comparisons, which indicates that smaller and older tobacco producers are less likely to continue producing tobacco, less likely to keep tobacco acreage the same or greater, and less likely to increase tobacco acreage
- Higher educational attainment increased the probability that operators planned to increase their tobacco acreage
- White farmers were more likely to keep acreage at least the same or expand

Expected Tobacco Production Response: Summary of Results – cont'd

- There was a positive effect for probability of increasing acreage in the most recent survey year. This may reflect in part the sharp reductions in tobacco quota that had taken place, increasing farmer interest in raising tobacco acreage relative to these reduced levels.
- Higher expected revenue per acre is associated with farmers being more likely to continue production and to keep acreage at least as high as before the end of the program
- The diversification treatment effect has a negative effect on tobacco acreage

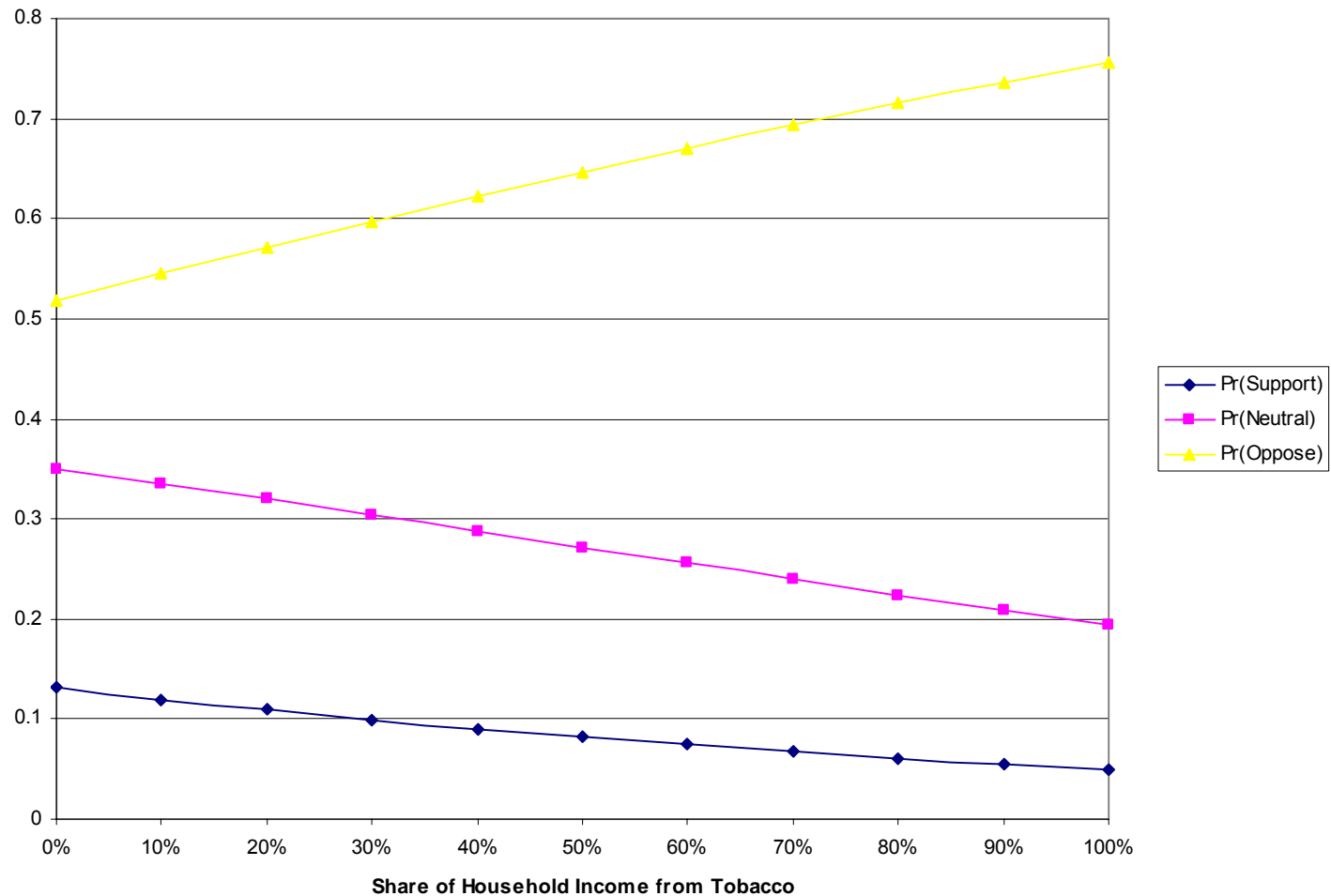
Grower Attitudes Towards Tobacco Control

- Among those that still derive income from tobacco in the 2004 survey, tobacco income share had no significant effect on their support for:
 - smoking ban at schools
 - enforcement of fines for businesses selling to youthBut it did have a highly significant negative effect on:
 - Support for voluntary restaurant ban on smoking
- There was also a highly significant positive effect of tobacco income share on perceived risk of public smoking restrictions
- Being in a county receiving the tobacco diversification program had significant effects in the expected direction

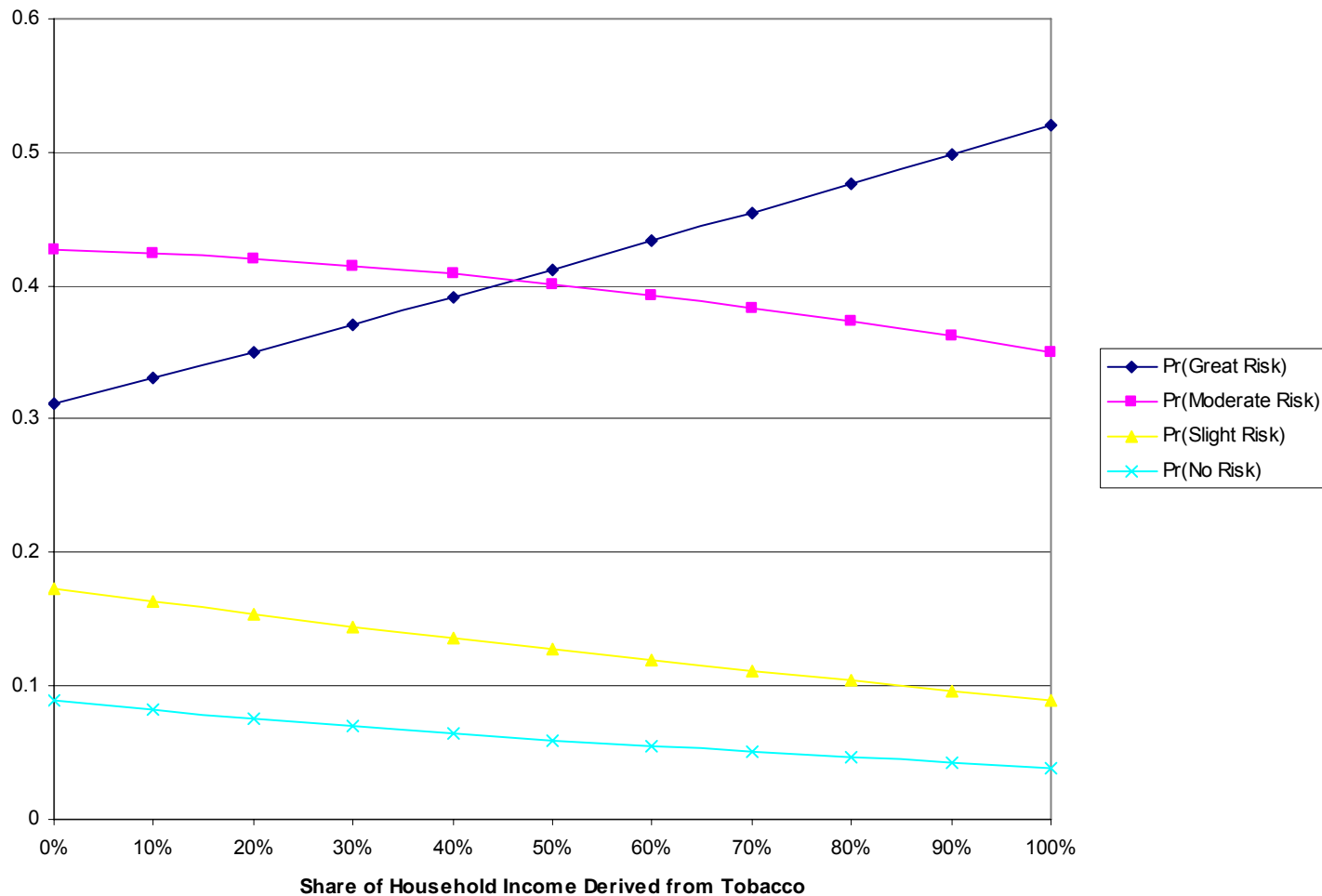
Grower Attitudes Towards Tobacco Control: Model Results

Voluntary Restaurant Smoking Bans (0=Support, 1=Neutral, 2=Oppose)	Coeff	SE	Perceived Risk of Public Smoking Restrictions (0=Great Risk, ... 3=No Risk)	Coeff	SE
AGE	-0.011	0.066	AGE	-0.072	0.061
AGESQ	-0.000	0.001	AGESQ	0.001	0.001
ED_HS	0.449	0.362	ED_HS	-0.085	0.372
ED_SOMECOLL	0.411	0.396	ED_SOMECOLL	0.417	0.381
ED_COLLGRAD	0.322	0.386	ED_COLLGR	0.441	0.387
MALE	0.022	0.428	MALE	0.192	0.429
WHITE	1.078***	0.396	WHITE	-0.935**	0.406
USETOBACCO	0.338	0.224	USETOBAC	0.044	0.183
TX	-0.352*	0.206	TX	0.395**	0.181
MARRIED	-0.227	0.321	MARRIED	0.582**	0.274
CHILDREN	0.714*	0.409	CHILDREN	0.655*	0.387
TINCSH	1.057***	0.380	TINCSH	-0.877***	0.331

Tobacco Farmer Support or Opposition - Voluntary Restaurant Bans on Smoking



Risk of Public Smoking Restrictions Perceived by Tobacco Farmers



Conclusions

- Changes taking place in tobacco markets have had a very significant impact on growers' attitudes towards the future of tobacco farming
- Most growers expected and favored a tobacco quota buyout, though they also see greatly increased risk
- A large number of tobacco growers are expected to exit tobacco production in the absence of the federal program, particularly smaller operations and those with older operators
- Level of dependence on tobacco income affects attitudes towards some tobacco control measures

Future Research

- Use new survey data being collected post-buyout to look at the impacts of the tobacco quota buyout on:
 - Farmer attitudes
 - ◆ Tobacco farming
 - ◆ Diversification
 - ◆ Tobacco control
 - Tobacco production
 - Income
 - Future plans