



Agricultural Lending In The State Of Texas

Results From 4 Streams Of Research

Research Conducted By:

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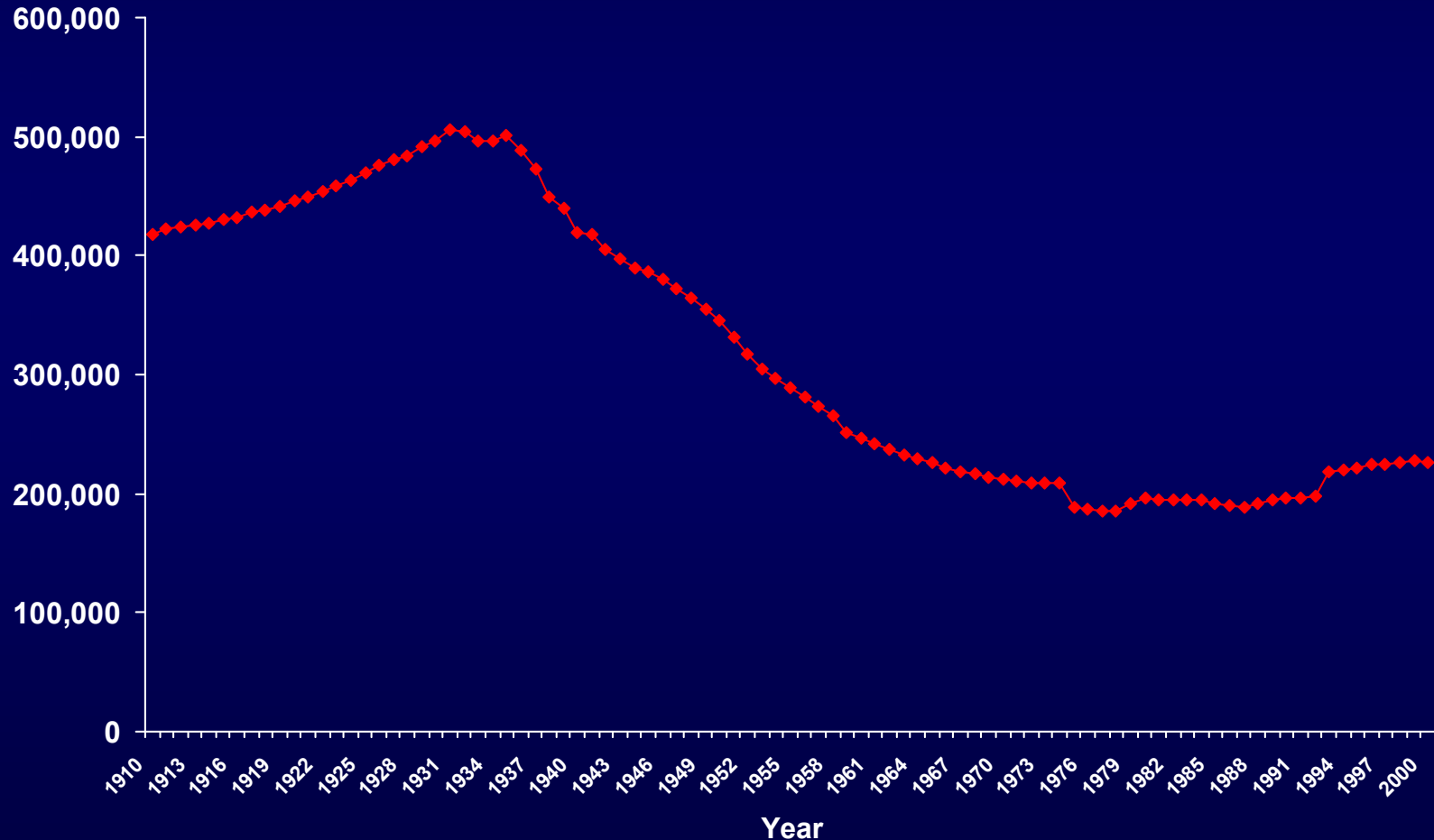
Background

- In 2002, The Finance Commission of Texas sponsored research on agricultural business lending in the state. Agriculture, in the form of farming and ranching, is very important to the economy of the state of Texas and this research was designed to develop a clear understanding of the current state of lending to agricultural businesses. This presentation is a “brief” summary of the results. There is a detailed report which can be obtained from the Finance Commission.
- To accomplish the research objectives Analytica conducted four separate streams of research. Data sources supporting each research stream were:
 - 1) Historical data on agricultural production in the state from 1910 to 2000 and more detailed data from the Census of Agriculture, conducted every five years from 1964 to 1997;
 - 2) Data on agricultural lending from District 11 of the Federal Reserve Bank from 1986 to 2002;
 - 3) In-depth interviews with eight experts on agricultural production and lending in the state;
 - 4) Interviews with a random sample of 400 farmers and ranchers in the state.
- U.S. Census of Agriculture definition of a farmer: any person engaged in the use of land for agricultural means who generates revenue of at least, or normally would produce at least, \$1,000 per year. This, of course includes entities engaged in farming, ranching, or both.
- Using this definition, Texas had 227,000 farms in 2001.

In 1910 the number of farms and ranches in Texas was slightly over 400,000. This number grew to about 500,000 by 1935, dropped steadily until it leveled off to slightly under 200,000 in 1975 and has increased to 227,000 by 2001. The increase in the number of farms over the last several years has primarily come from the “Under 50 acre group”. The last 15 years has also seen an increase in the number of farms with sales “Over \$500,000” and the number of farms with sales “Under \$2,500”.

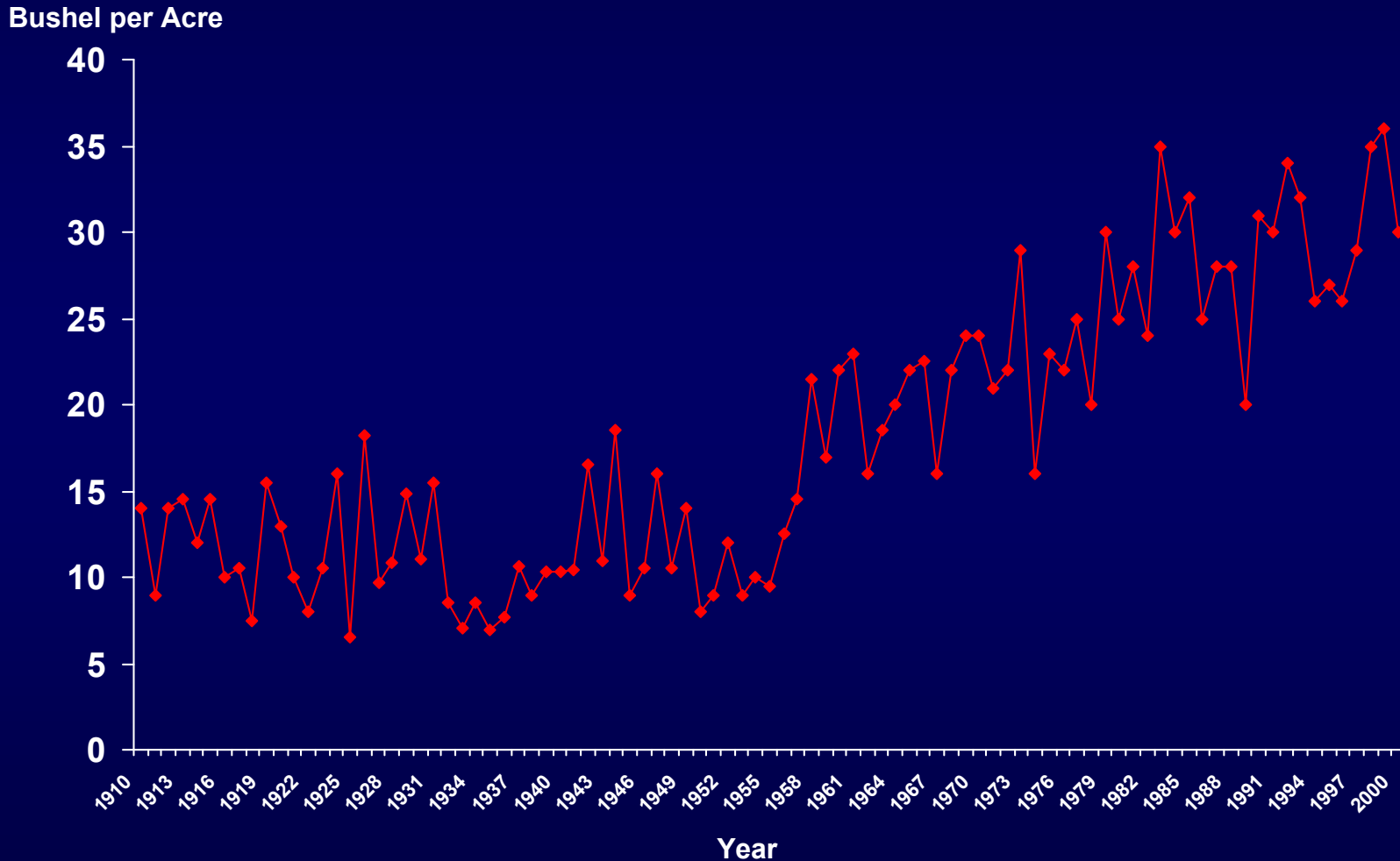
Figure 1: Number of Farms in Texas: 1910 to 2000

Number of Farms



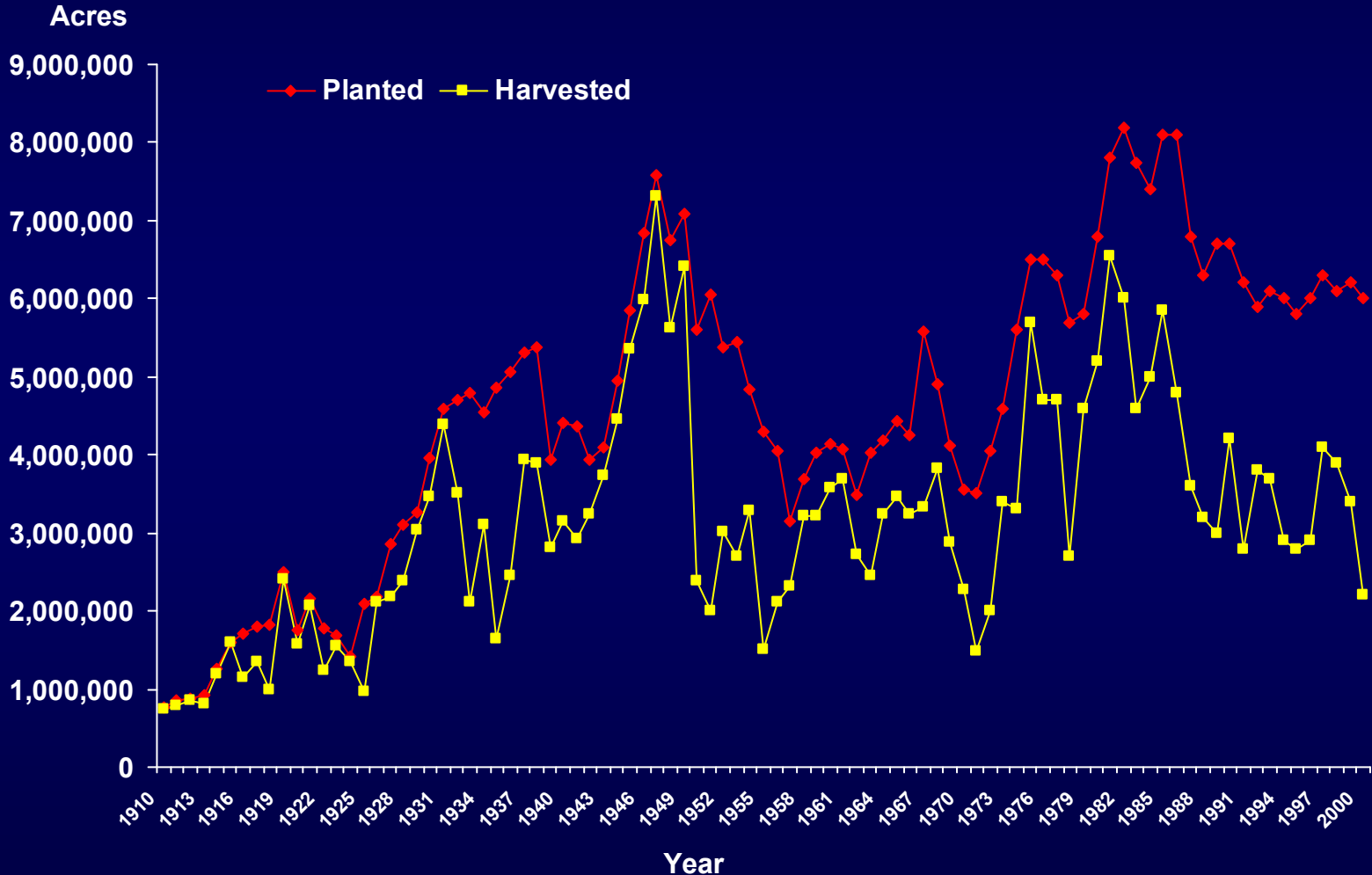
Crop yields in almost every crop category for which there is data available have persistently increased since 1955.

Figure 2: Yield of Wheat Production in Texas: 1910 to 2000



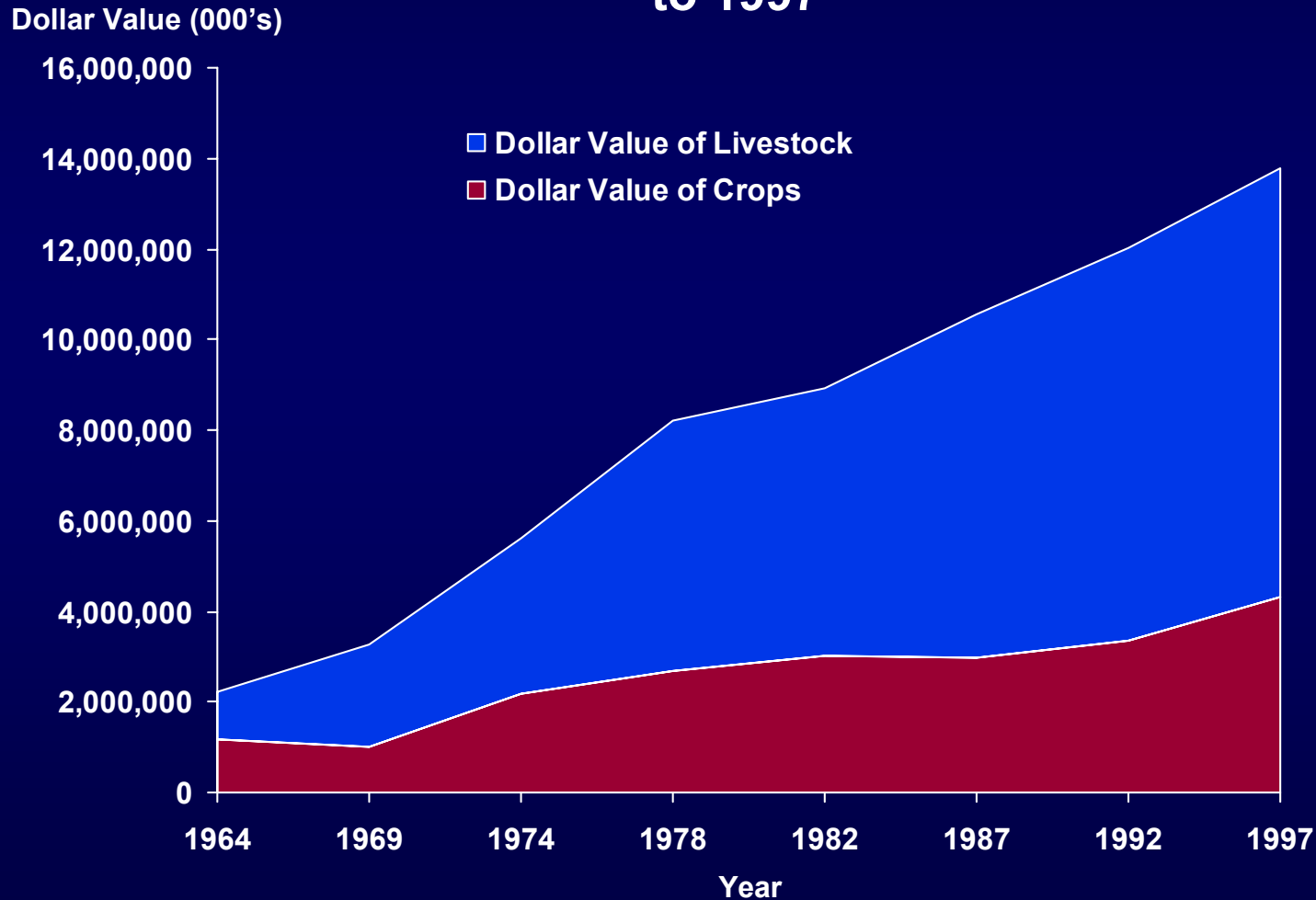
For some crops there is an increasing gap between the number of acres planted and the number of acres actually harvested, which indicates there is a trend toward leaving more and more acres unharvested.

Figure 3: Total Acreage Devoted to Wheat Production in Texas: 1910 to 2000



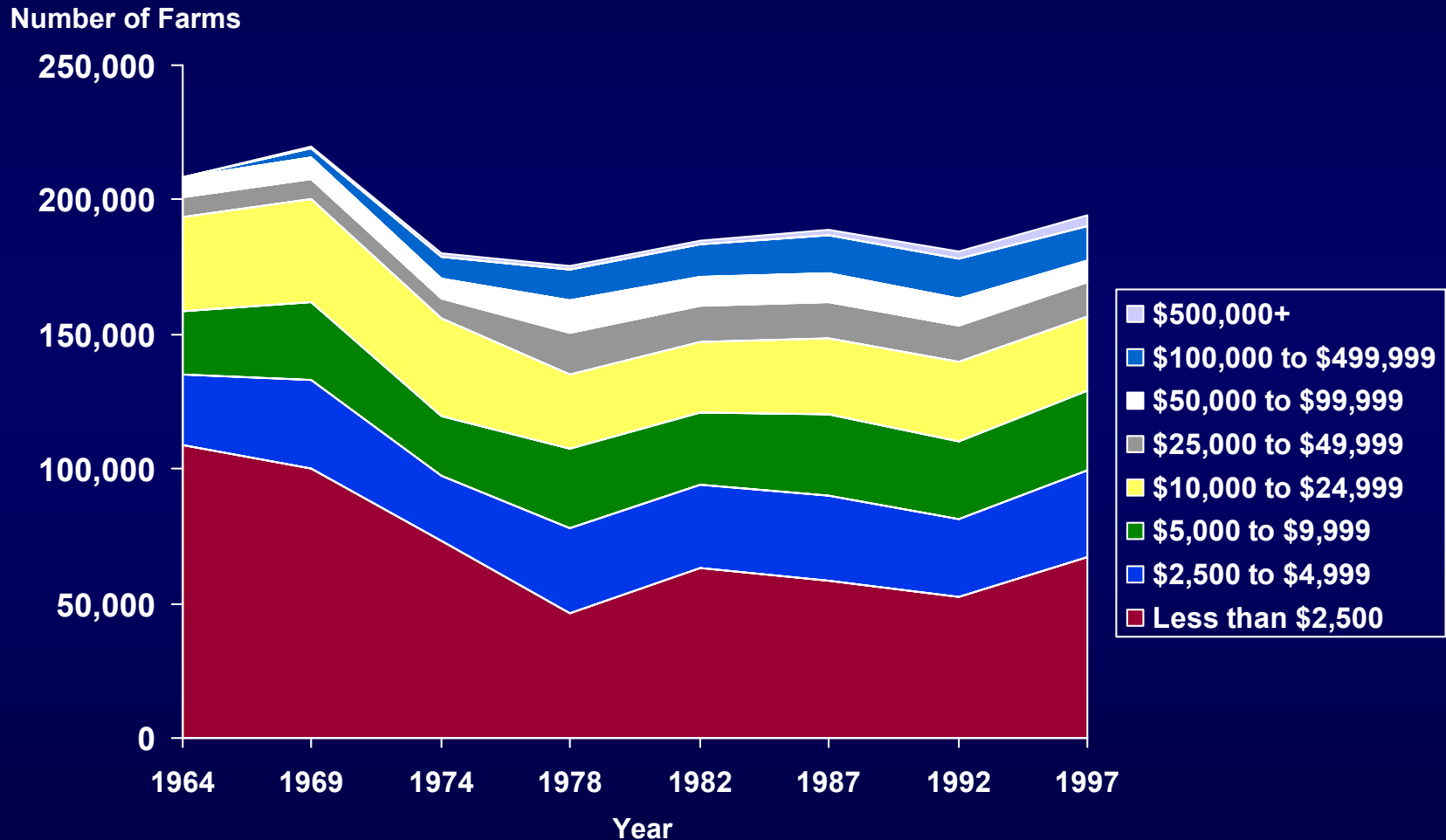
The pattern in the number of farms (slide 2) is not reflected in the pattern of production of either livestock or crops. Cattle production has enjoyed a persistent increase from almost 7 million head in 1910 to 14 million head in 2001. Even more dramatic than the increase in cattle production is the increase in the total market value of all crops and livestock: from approximately \$2 billion in 1964 to almost \$14 billion in 1997.

Figure 4: Total Market Value of Crops and Livestock in Texas: 1964 to 1997



Of the estimated 194,301 farms in 1997, well over 150,000 were individual or family owned. Similarly, 67,440 (34.7%) had sales under \$2,500 and 169,049 (87.0%) had sales under \$50,000.

Figure 5: Number of Farms in Texas Segmented by Value of Sales: 1964 to 1997



Source: National Agricultural Statistical Service, Census of Agriculture for 1964 to 1997

Historical Data on Agricultural Lending

We first present 3 representative graphs and then summarize the main points gleaned from the entire data source.

Except for a spike of 400 agricultural bankruptcies in 1987, the Southern Plains oscillated between 100 and 200 bankruptcies per year. This stable pattern has existed from 1984 to 2000, except for the 1987 spike. Figure 6 shows the number of filings for the Southern Plains, wherein the Texas number would reside.

Figure 6: Southern Plains, Chapter 12 Bankruptcies: 1986 to 1999

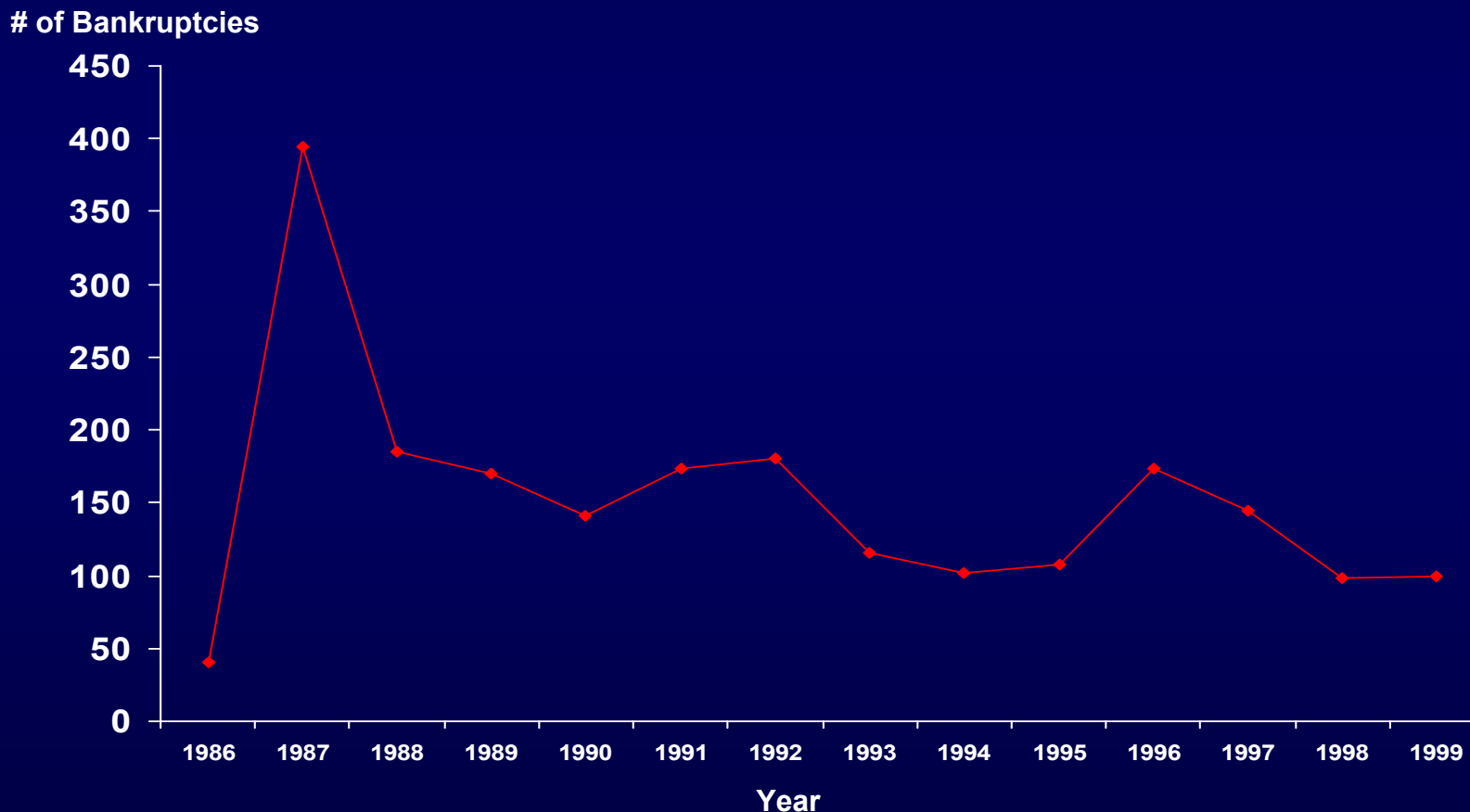


Figure 7 shows that since 1994 between 70% and 80% of the respondents believe the availability of funds has not changed.

Figure 7: Availability of Funds - Federal Reserve Bank, 11th District: 1986 to 2002

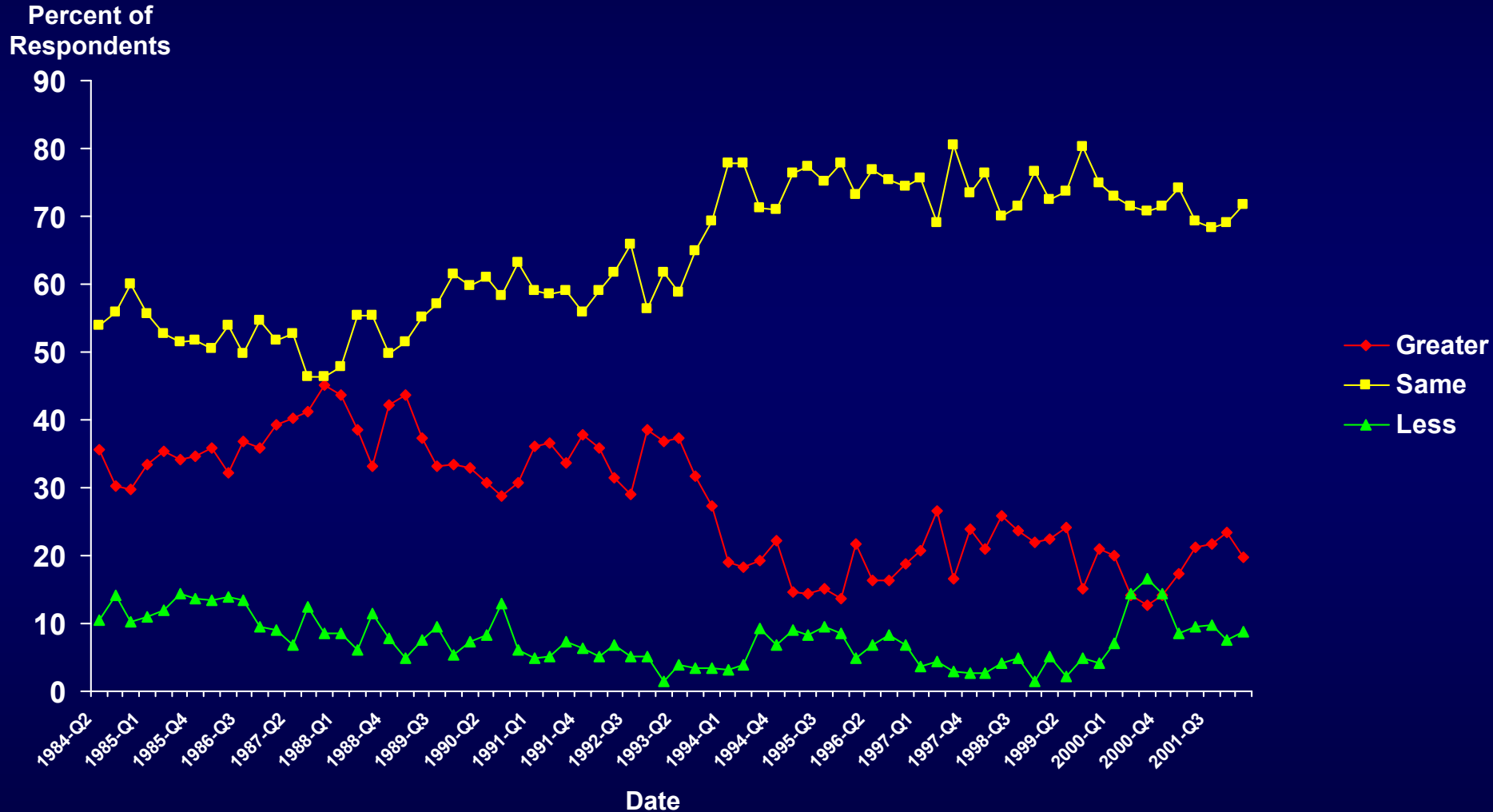
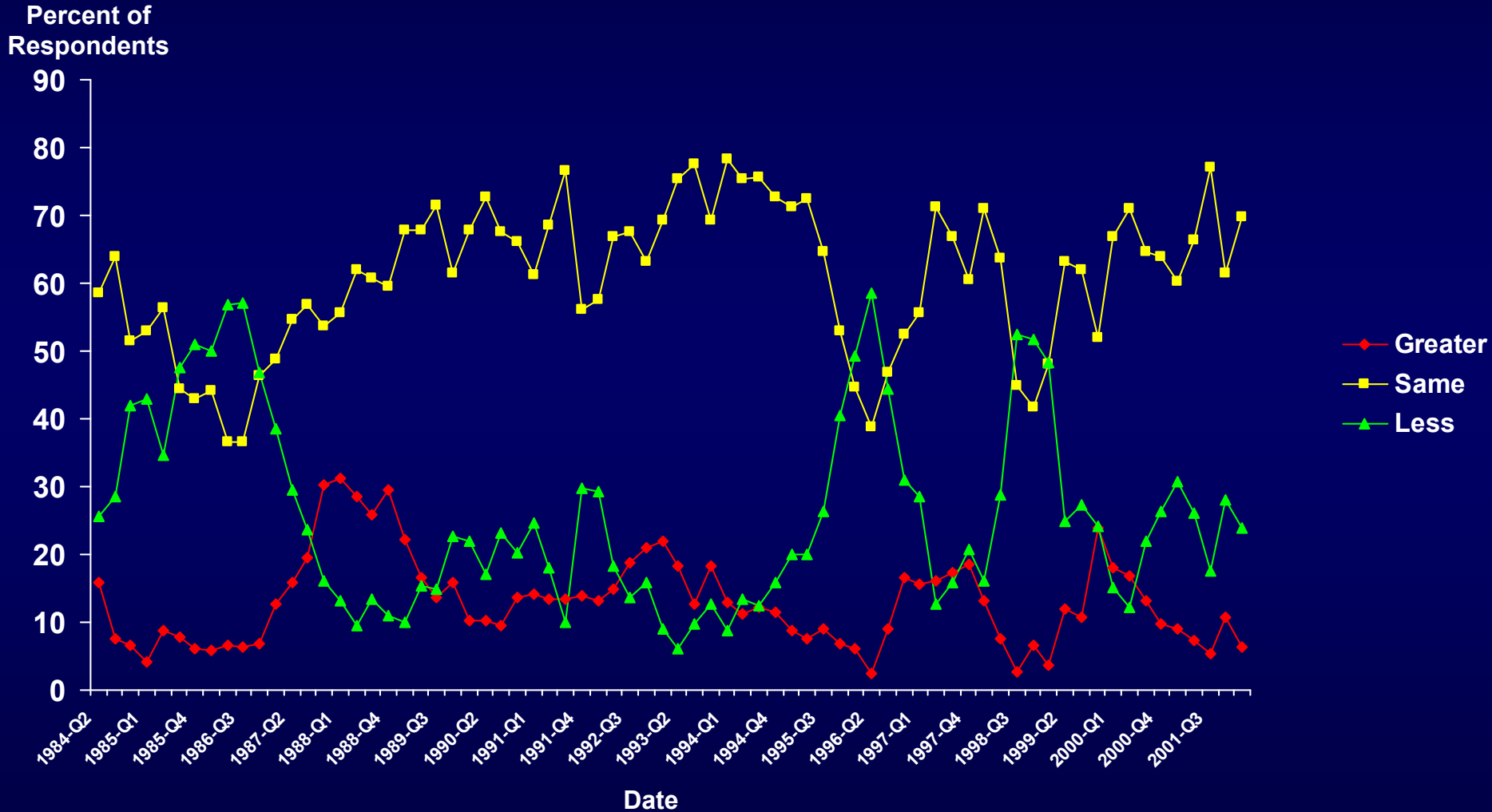


Figure 8 shows a healthy picture of loan repayment since quarter 2, 1999.

Figure 8: Rate of Loan Repayment - Federal Reserve Bank, 11th District: 1986 to 2002



Summary Of Results From Historical Data on Agricultural Lending

- Except for a spike of 400 agricultural bankruptcies in 1987, the Southern Plains oscillated between 100 and 200 bankruptcies per year. This stable pattern has existed from 1984 to 2000, except for the 1987 spike.
- Quarterly data from the Federal Reserve Bank, 11th District, for the last three years show fairly stable:
 1. Demand for loans;
 2. Availability of funds;
 3. Loan renewals or extensions;
 4. Loan repayment;
 5. Collateral requirements; and
 6. Loan-to-deposit ratios.
- Over the last two years there has been a modest increase in:
 1. The total amount of agricultural loans;
 2. The number of loans from the Farm Service Agency; and
 3. The dollar amount of Farm Service Agency loans.
- Land values per acre decreased steadily from 1986 to 1995 and then leveled off through the first quarter 2002. Although at different absolute levels, this pattern of decrease was virtually identical for irrigated, dry and ranch land.
- In summary, historical data on agricultural lending indicates stability, not crisis. There appears to be a normal, steady demand for loans and a normal, steady availability of funds.
- Overall, historical data on agricultural production and agricultural lending indicate the same stable, steady environment.

Summary of Results from Expert Interviews

Several factors have contributed to the accumulation of problems in Texas agriculture:

- **Water**: Water tables are going down so irrigated farming has suffered;
- **Weather**: Recent weather conditions have not been kind to farmers;
- **Market Conditions**: Market conditions, i.e., poor prices have been a problem. There are three contributing factors to the pricing problem: 1) trade imbalances; 2) the rising value of the dollar relative to other currencies; and, 3) a trade policy that lets in cheap (and sometimes subsidized) imports with tariffs that are not nearly as large as tariffs on exports.
- **Poor Management**: Some farmers have focused on operating income, reducing expenses, and becoming more efficient. These farmers have done well and are still very creditworthy. Farmers that have not approached their farming as a business and utilized careful investment decisions have not done well.
- **Loss Of Equity**: Some agricultural enterprises have lost so much equity over the last several years that those operations have increased their risk and, in turn, impeded their access to capital.

Suggestions from the experts for potential new programs include:

- A program that would transition ownership from the current generation of owners to younger family members or to promising employees of current operations (i.e., allow good, experienced employees to buy equity stakes in current successful operations).
- A government-encouraged system for bringing private equity investors into the agriculture business.
- The Federal government should adjust the tariff situation and make it more fair, balanced, and rational.
- New, long-term educational programs covering all aspects of creating and delivering value-added products should be encouraged.

Summary of Results from Interviews with a Stratified Random Sample of 400 Agricultural Producers

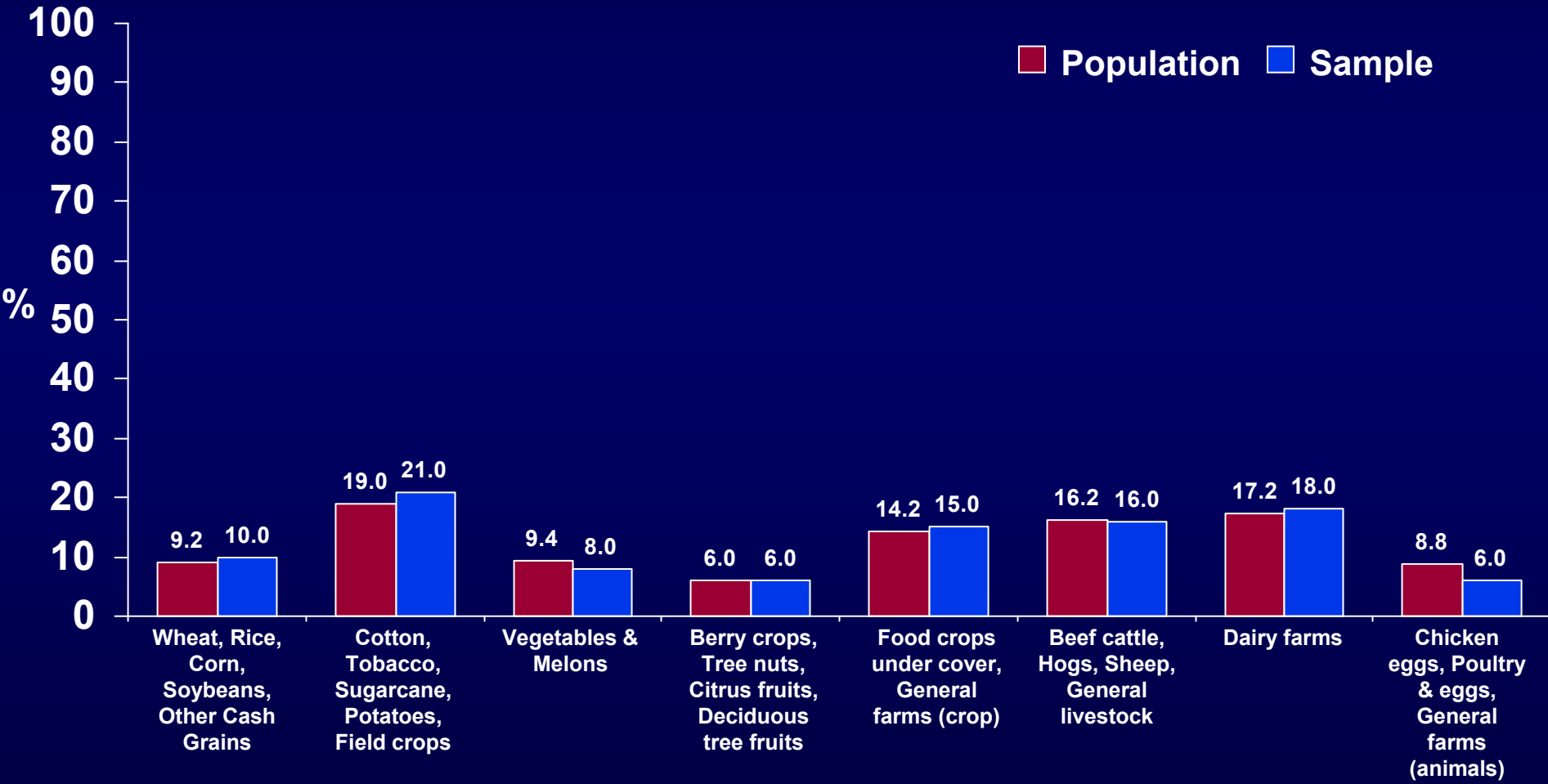
Methodology

- From a Dun & Bradstreet file of 15,627 Texas enterprises in agricultural production (first handlers), Analytica extracted the 500 largest such enterprises (based on revenue). This group was labeled the population of large first handlers and a random sample of 100, stratified by Primary SIC Code, Area Code, and Revenue was interviewed. Every enterprise in this group had revenues above \$500,000 and 48% had revenues above \$1,000,000.
- From the same master file of 15,627 first handlers, a second sample of 300 was also interviewed. In an attempt to avoid too many interviews with individuals who were actually semi-retired or engaged in “recreational farming” only enterprises with revenues over \$10,000 were included. This cutoff was set low on purpose by the Finance Commission to make certain the perspective of small farmers and ranchers would be included in this research. The primary purpose of the research was centered around agricultural lending and, as the interviews progressed, it became clear that a great many of the enterprises with revenues less than \$25,000 did not currently have, and did not want to obtain, a loan. A decision was made by the Finance Commission, therefore, to interview as many as possible in the lower revenue category, but not over 30%. Consequently, only quotas by area code were set for this research and these were derived from the Dun & Bradstreet file of 15,627 first handler businesses.

The Population and Sample of Large Producers

Figure 9 compares the population and sample of large producers by primary SIC code. The fact that the two bars are virtually identical illustrates that the sample is representative of the population with regard to SIC code.

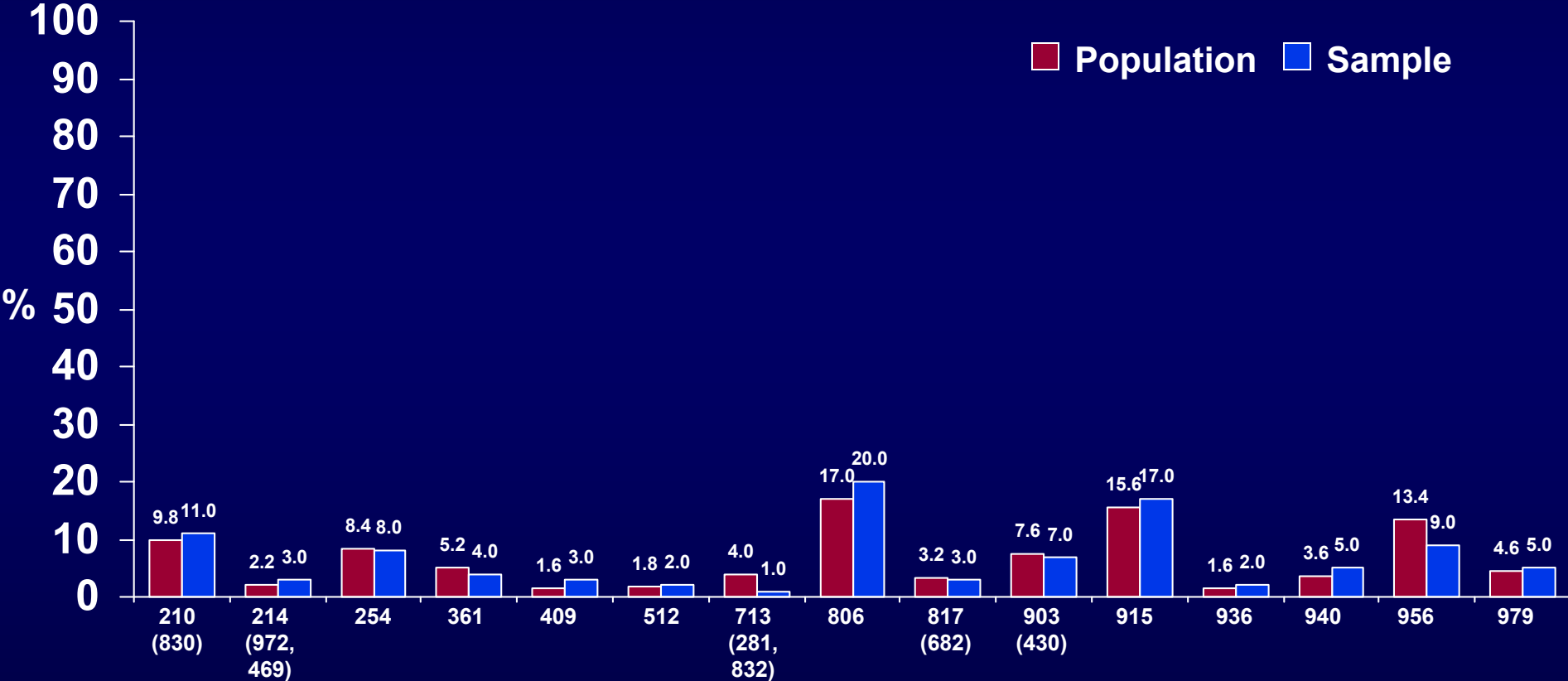
Figure 9: Population And Sample By Primary SIC Code: Largest 500 Producers



• All numbers are in percentages.

Figure 10 compares the population and sample of large producers by area code. The Figure documents that the sample spans the entire state and parallels the population for area code. The fact that the two bars are virtually identical illustrates that the sample is representative of the population with regard to area code distribution.

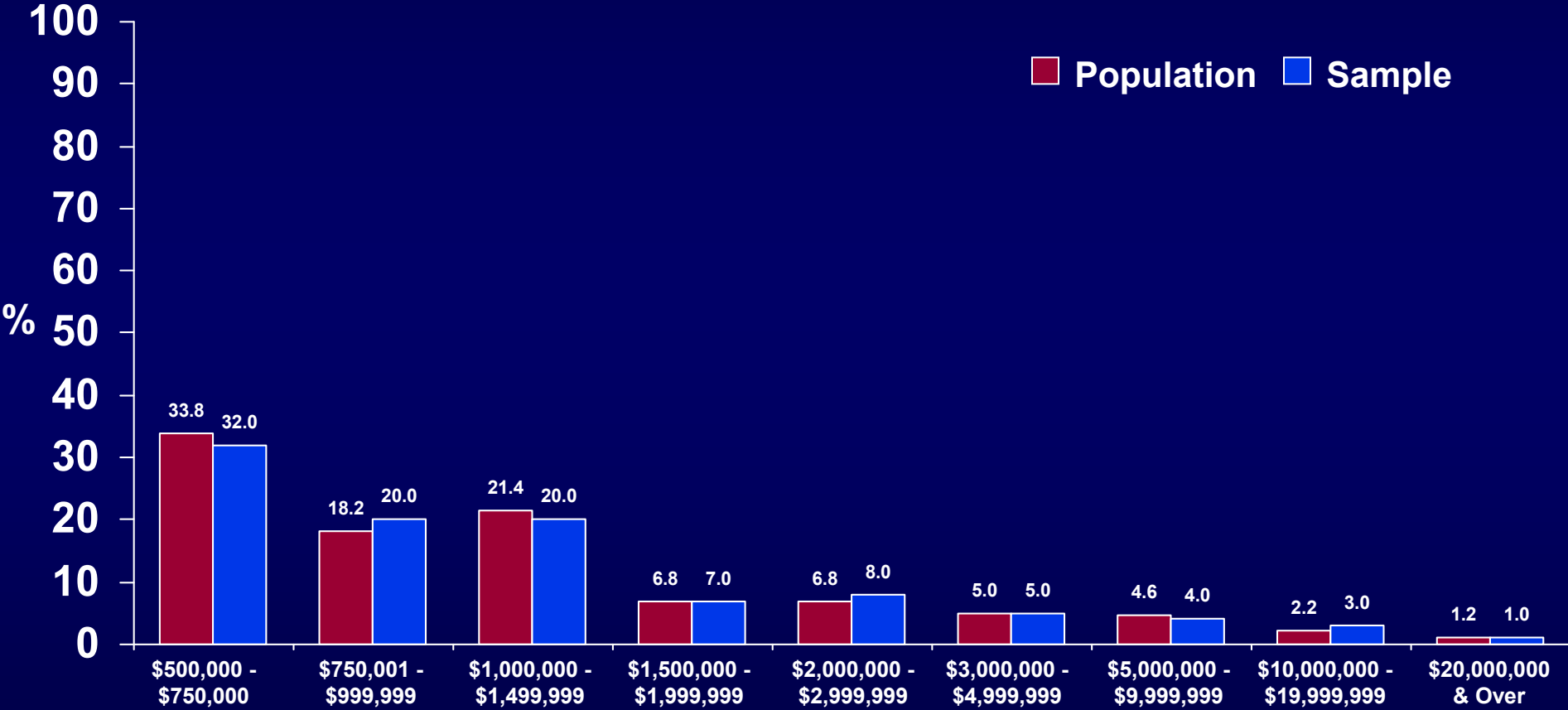
Figure 10: Population And Sample By Area Code: Largest 500 Producers



- All numbers are in percentages.

Figure 11 compares the population and sample of large producers by revenue category. The fact that the two bars are virtually identical illustrates that the sample is representative of the population with regard to revenue category distribution.

Figure 11: Population And Sample By Revenue Category: Largest 500 Producers

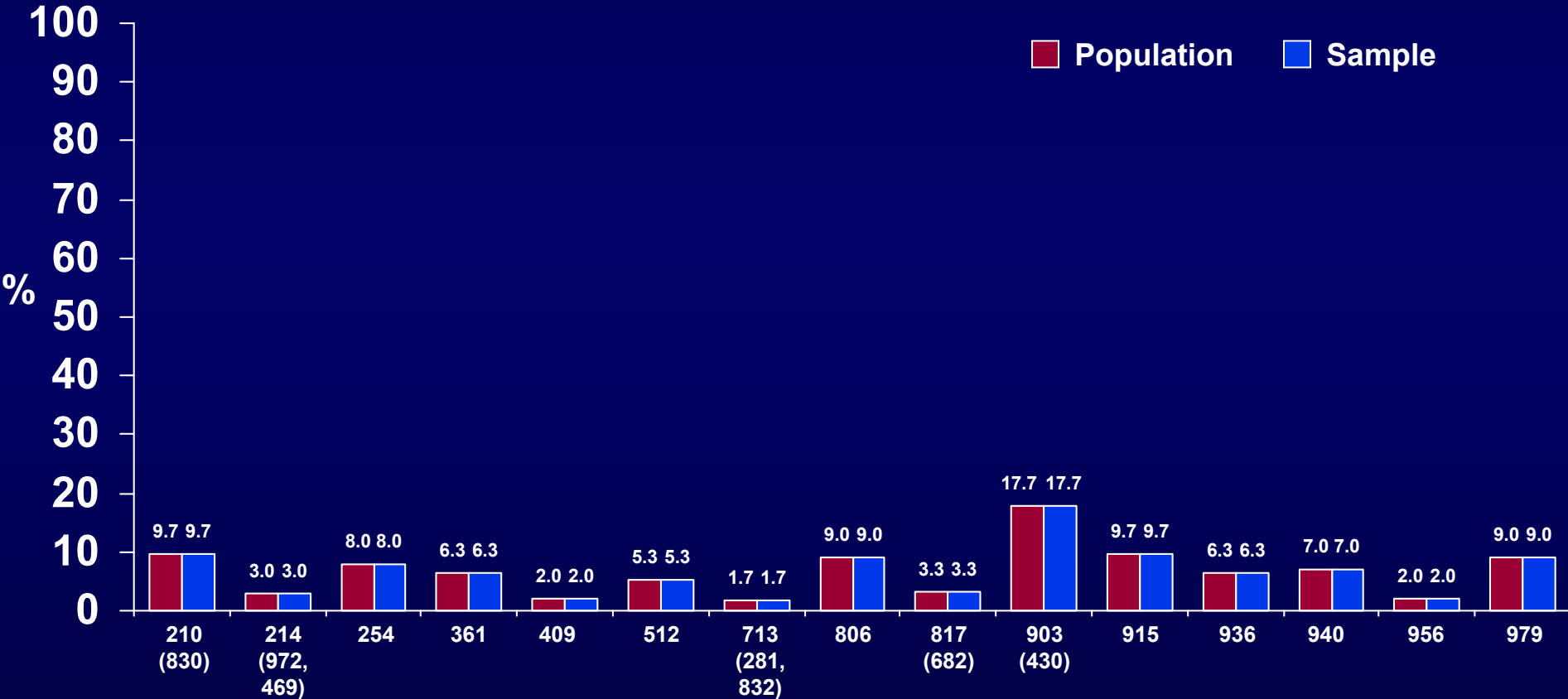


- All numbers are in percentages.

The Population and Sample of All First Handlers

Figure 12 compares the population and sample of all first handlers by area code. The Figure documents that the sample parallels the population for each area code. The fact that the two bars are virtually identical illustrates that the sample is representative of the population with regard to area code distribution.

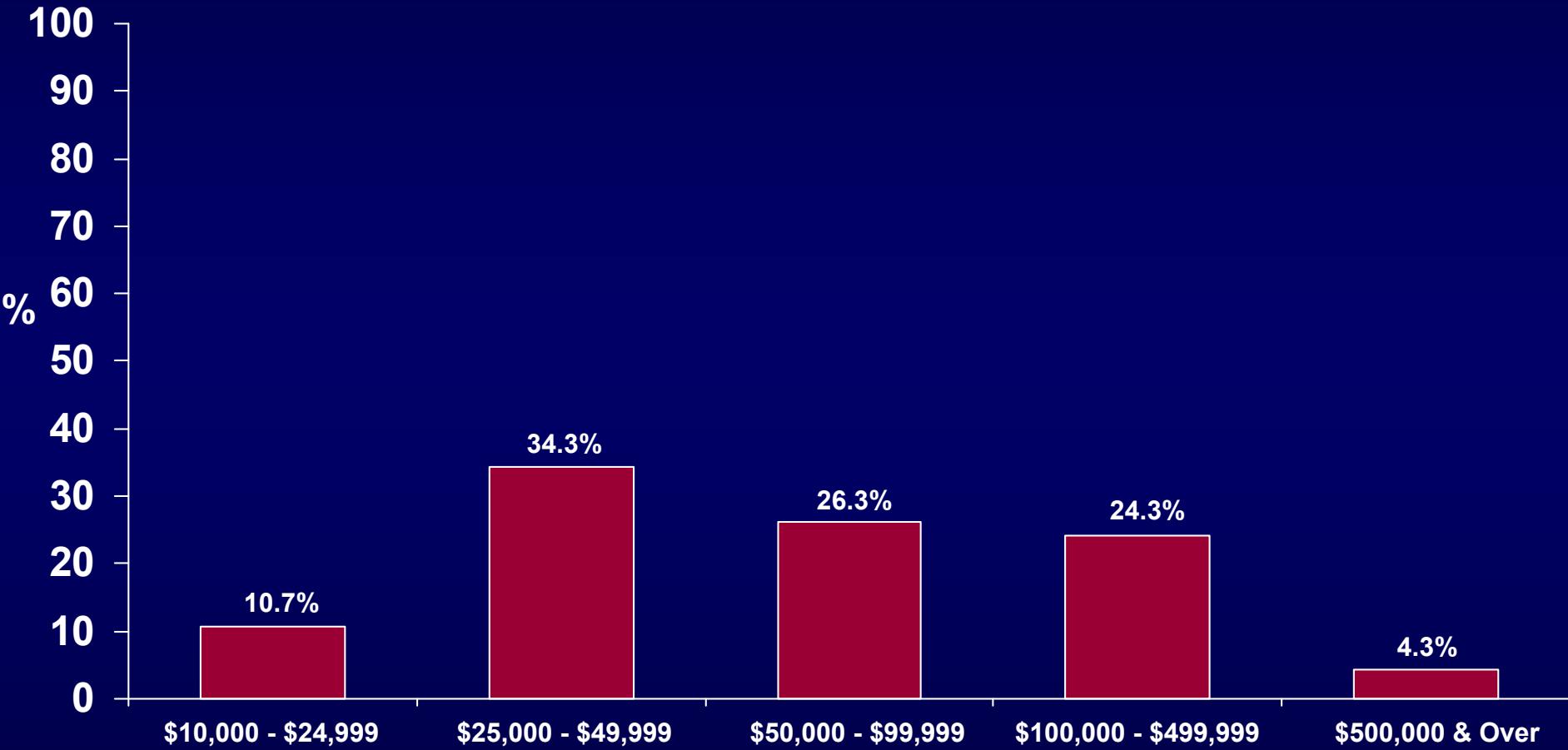
Figure 12: Population And Sample By Area Code: All First Handlers



- All numbers are in percentages.

Figure 13 presents the distribution of the 300 first handler interviews by revenue category.

**Figure 13: Distribution Of The 300 Interviews By Revenue Category:
All First Handlers**



Nature Of Loans

- Table 1 shows the percents of the “Large Producer (N=100)” and “All Producer (N=300)” samples with each type of loan.

Table 1-Number of Loans by Type for Sample	Large Producer Sample (N=100)	All Producer Sample (N=300)
Any Loan	85.0%	41.4%
Land or Building Loan	52.0%	20.7%
Equipment or Livestock Loan	55.0%	18.3%
Operating Loan	66.0%	23.3%

- Table 2 shows the median loan amount and median interest rate, fixed and variable, for Land or Building Loans for the two samples. Also included are other data on the loan process. For example, note the information on the row labeled Amount. Of the 100 in the large producer sample, 51 had a land or building loan and provided the amount. Of the 51 amounts, the median was \$430,000.

Table 2- Land or Building Loans	Large Producer Sample (N=100)	All Producer Sample (N=300)
Amount	\$430,000 (N=51)*	\$135,000 (N=44)
Fixed Interest Rate	7.5% (N=33)	7.0% (N=43)
Variable Interest Rate	5.0% (N=8)	5.75% (N=7)
Loan-To-Equity Ratio	70.0% (N=31)	70.0% (N=19)
Additional Collateral	7.7%	18.3%
Personal Guarantee ¹	61.5%	43.3%
(For Farmers) Crop Insurance	5.4%	9.1%
Federal Farm Participation	7.7%	6.6%

* When the N is cited, the number provided is the median amount.

¹ Special note regarding “Personal Guarantee”: If their operation was in the form of a sole proprietorship any loan would by definition involve personal liability, but they may not have responded affirmatively.

Table 3 shows the result for Equipment or Livestock Loans.

Table 3- Equipment or Livestock Loans	Large Producer Sample (N=100)	All Producer Sample (N=300)
Amount-Standard	\$125,000 (N=42)*	\$20,000 (N=34)
Amount-Line of Credit	\$1,000,000 (N=8)	\$25,000 (N=9)
Fixed Interest Rate	7.0% (N=36)	7.0% (N=36)
Variable Interest Rate	6.0% (N=7)	5.9% (N=7)
Loan-To-Equity Ratio	80.0% (N=25)	70.0% (N=20)
Additional Collateral	20.0%	20.4%
Personal Guarantee ¹	58.2%	32.1%
(For Farmers) Crop Insurance	6.3%	8.6%
Federal Farm Participation	5.5%	7.4%

Table 4 shows the result for Operating Loans.

Table 4- Operating Loans	Large Producer Sample (N=100)	All Producer Sample (N=300)
Amount-Standard	\$300,000 (N=15)*	\$71,000 (N=30)
Amount-Line of Credit	\$400,000 (N=41)	\$67,000 (N=19)
Fixed Interest Rate	7.5% (N=29)	7.3% (N=43)
Variable Interest Rate	6.0% (N=16)	6.0% (N=8)
Loan-To-Equity Ratio	80.0% (N=8)	60.0% (N=11)
Additional Collateral	40.9%	33.3%
Personal Guarantee ¹	66.7%	29.4%
(For Farmers) Crop Insurance	28.0%	35.7%
Federal Farm Participation	12.1%	17.9%

* When the N is cited, the number provided is the median amount.

¹ Special note regarding "Personal Guarantee": If their operation was in the form of a sole proprietorship any loan would by definition involve personal liability, but they may not have responded affirmatively.

- Table 5 shows the types of lenders used for each type of loan.

Table 5- Types of Lenders Used	Large Producer Sample (N=100)	All Producer Sample (N=300)
Land/Building Loan		
Commercial Bank	40.4%	39.3%
Farm Credit System	32.7%	41.0%
Farm Service Agency	1.9%	6.6%
Other*	25.0%	13.1%
Equipment/Livestock Loan		
Commercial Bank	54.5%	55.6%
Merchant/Dealer Credit	25.5%	25.9%
Farm Credit System	9.1%	5.6%
Farm Service Agency	0.0%	5.6%
Other*	10.9%	7.4%
Operating Loan		
Commercial Bank	83.3%	62.3%
Farm Credit System	10.6%	18.8%
Merchant/Dealer Credit	0.0%	7.2%
Farm Service Agency	0.0%	7.2%
Other*	6.1%	4.4%

* Responses of “Other” in the above table included: For Land or building loans - Credit Union, seller financing, an individual, a family trust. For Equipment and/or Livestock loans - Credit Union, finance company, FHA, National Livestock. For Operating loans - Credit Union, SBA.

Nature Of Problems (As selected from list provided)

- For the Large Producer Sample the top three problems encountered with Land or Building Loans were:
 - Finding interested lenders (19.2%);
 - Repaying the loan (9.6%); and
 - Completing the loan applications (7.7%).
- For the All Producer Sample the top three problems were:
 - Finding interested lenders (16.4%);
 - Repaying the loan (16.4%); and
 - Refinancing the loan (14.8%).
- For the Large Producer Sample the top three problems encountered with Equipment or Livestock Loans were:
 - Finding interested lenders (20.0%);
 - Repaying the loan (10.9%); and
 - Applying for the loan (7.3%).
- For the All Producer Sample the top three problems were:
 - Repaying the loan (13.0%);
 - Finding interested lenders (9.3%); and
 - Applying for the loan (7.4%).
- Finally, for the Large Producer Sample the top three problems encountered with Operating Loans were:
 - Finding interested lenders (24.2%);
 - Repaying the loan (18.2%); and
 - Applying for the loan (6.1%).
- For the All Producer Sample the top three problems were:
 - Repaying the loan (23.2%);
 - Finding interested lenders (13.0%); and
 - Refinancing the loan (13.0%).

- **Clearly the two biggest problems are “Finding interested lenders” and “Repaying the loan”. About 1 in 5 first handlers have problems finding interested lenders and about 1 in 6 have had problems repaying the loan.**
- **In terms of satisfaction ratings the item consistently receiving the worst ratings was “Number of lending alternatives available and interested”. This was true of the Large Producer Sample (Average of 6.03 on a “1” to “10” scale where “10” is “Extremely Satisfied”) as well as the All Producer Sample (Average = 6.34). Other steps in the lending process receiving particularly low ratings were “Collateral requirements, including loan-to-equity ratio” (6.78 from the Large Producer Sample), and “Application process and forms” (6.92 from the Large Producer Sample).**
- **9 of the Large Producer Sample and 10 of the All Producer Sample had been turned down for a loan, some multiple times. Reasons given, however, were quite varied.**
- **13 of the Large Producer Sample and 19 of the All Producer Sample had been in a situation where they could not repay a loan. More flexible payment requirements and loan refinancing/restructuring was the solution in most cases.**
- **Of the 85 respondents in the Large Producer Sample who had loan experience, 62.4% could cite instances where their lender was especially helpful or understanding but 9.4% volunteered examples where the lender was not. Among the 124 respondents in the All Producer Sample with lending experience, 65.3% could cite helpful instances and 6.5% volunteered examples where the lender was not.**
- **For the Large Producer Sample, 35.3% of the 85 with loan experience had used income from a non-agricultural source to repay an agricultural loan during the last 3 years. For the All Producer Sample the number was 47.2% of the 124 with loan experience. The median amount of income used ratioed to loan value was 20% for the Large Producer Sample and 25% for the All Producer Sample.**
- **From the Large Producer Sample, 35% said they received no help from the Federal and/or State government and 15.0% said they received very little. For the All Producer Sample the corresponding numbers were 51.7% and 21.3%, respectively.**

Policy Recommendations Offered By First Handlers

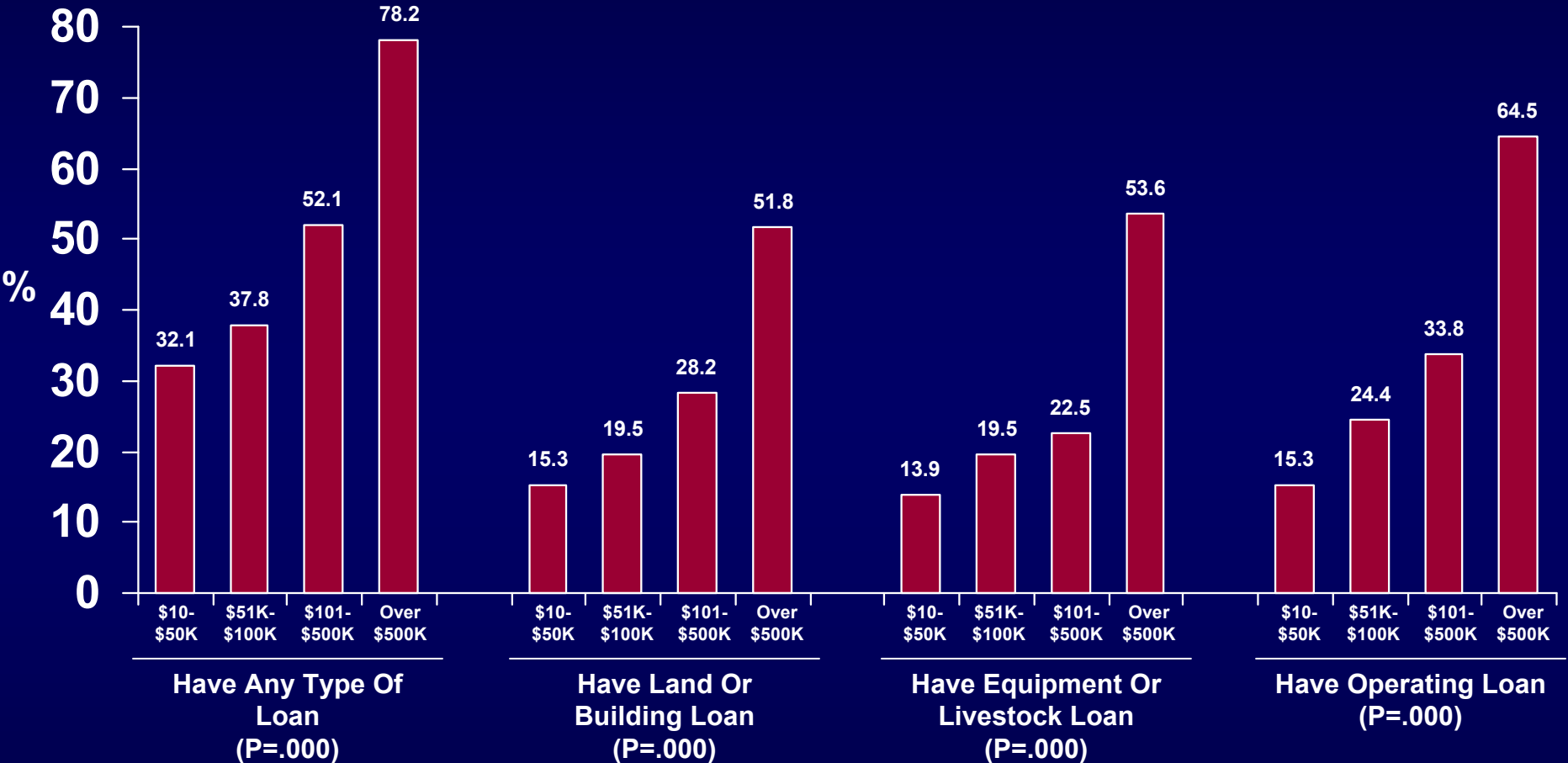
- When asked for recommendations to the Texas State Legislature for suggested changes to support agricultural production, the Large Producer Sample mentioned: Better prices (6.0%); Import problems (4.0%); Concern over water (3.3%); Less government involvement (3.0%); Greater availability of funding (2.7%); and Newer and more markets (2.7%). For the All Producer Sample ideas included: Better prices (18.3%); Less government involvement (9.0%); Import problems (7.3%); More government involvement (6.7%); Tax breaks and reforms (6.0%); and Greater availability of funding (5.7%).
- When asked for legislative recommendations regarding agricultural lending, around 50% in both samples could offer no further recommendations. The recommendations that were offered included: Making the lending process easier (21.2% and 14.5% from the Large and All Producer samples, respectively); Help with interest rates (10.6% and 10.5%); More lending sources (8.2% and 7.3%); and More knowledge and understanding about agriculture (7.1% and 13.7%).
- From the Large Producer Sample, of the 15 without loans, 13 said they could get one if they wanted one and 2 didn't know. From the All Producer Sample, of the 176 without loans, 85.7% said they could get one, 12.2% said no, and 2.0% did not know.

Significant Differences In Responses By Demographic Variables

- There were many interesting and revealing relationships between some of the demographic variables, for example "Revenue" or "Primary SIC Code" and answers to the survey questions. Every significant result is referenced in the detailed report but the most useful are included here.

Figure 14 shows that loans in general, as well as each separate type of loan, varies significantly by revenue. This makes sense, of course, but it also helps document that the biggest exposure to lending problems comes from the larger enterprises.

Figure 14: Significant Differences In Responses by Revenue (1 of 2)¹

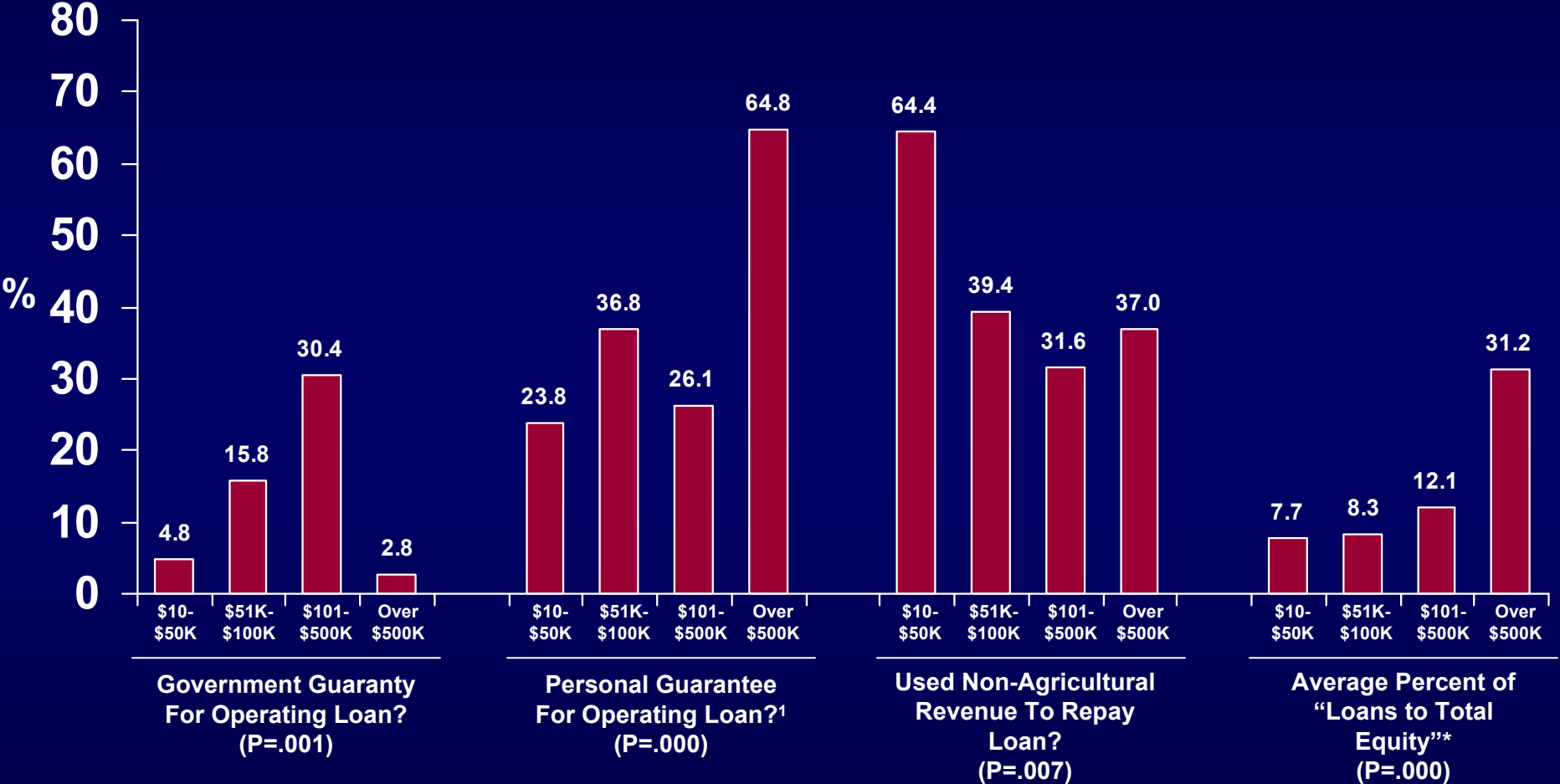


■ Results by number of workers, number of acres and number of livestock, where significant, parallel results exactly by revenue and therefore are not reported.

¹ Note that this is the first time in the report where we describe the results of a statistical test. In Figure 14, for example, answers to all four questions about loan types were significantly different by revenue. Whenever the probability reported in parentheses is less than 0.05 one may interpret the differences in the graph as meaningful. If the probability cited is 0.05 or above the differences in the graph should not be considered meaningful.

Figure 15 shows that the largest operations are the least likely to have a government guaranty for an operating loan but the incidence of such goes up as the revenue increases from the lowest category through the next two levels. Correspondingly, the largest operations are much more likely to have to offer a personal guaranty. The smallest operations are more likely to have used non-agricultural revenue to repay a loan and the average percent of loans to equity increases with size.

Figure 15: Significant Differences In Responses by Revenue (2 of 2)

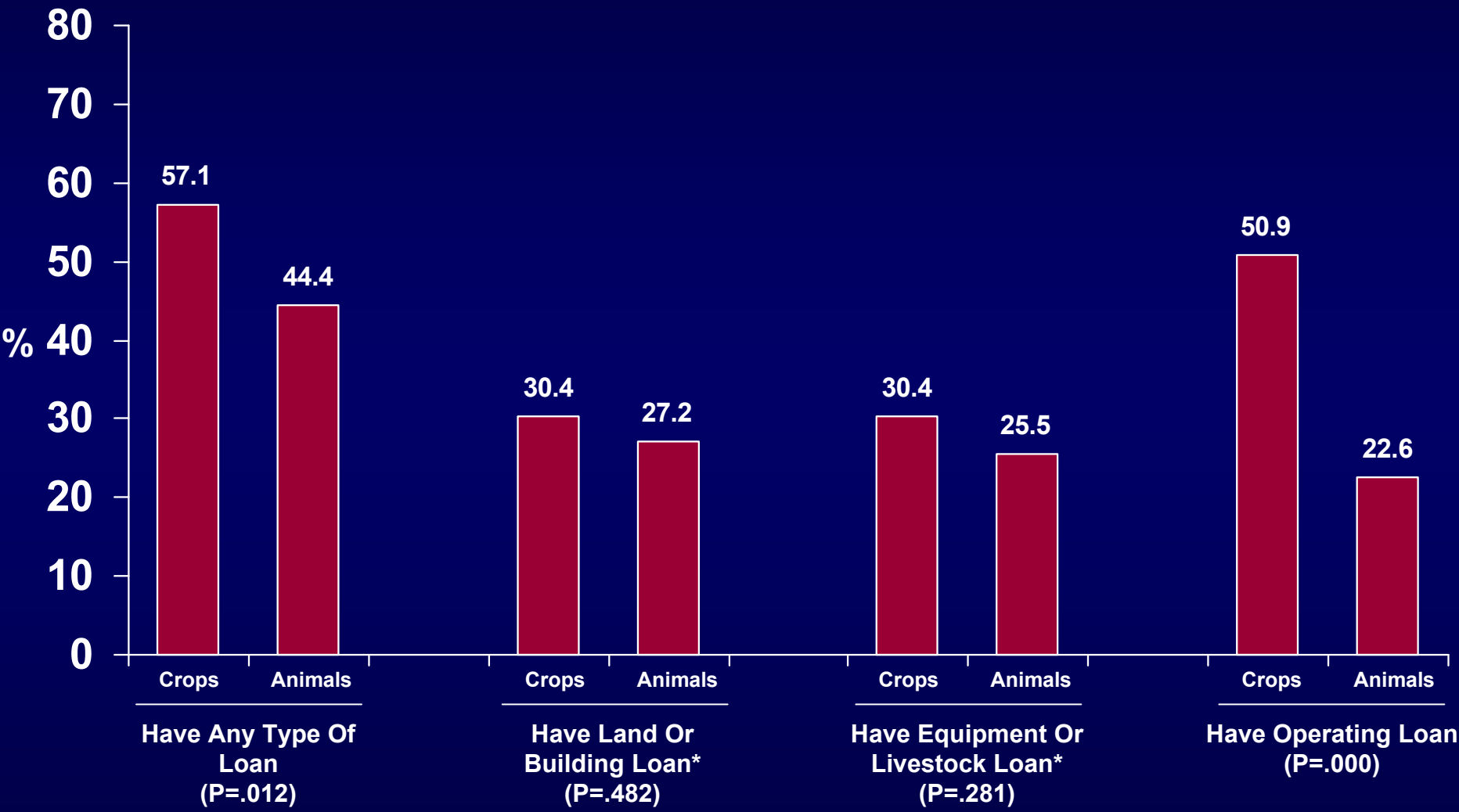


* The calculation includes all agricultural respondents, both those with and without debt. Considering only those with loans, the averages for the 4 levels are: 32.7, 30.4, 40.4, 42.1 (P=.244)

¹ Special note regarding "Personal Guaranty": If their operation was in the form of a sole proprietorship any loan would by definition involve personal liability, but they may not have responded affirmatively.

Figure 16 makes it clear that operations involving primarily crops are more likely to have a loan, primarily because they are more likely to have an “operating loan”. Results for “land or building loans” or “equipment or livestock loans” are not significantly different by SIC code.

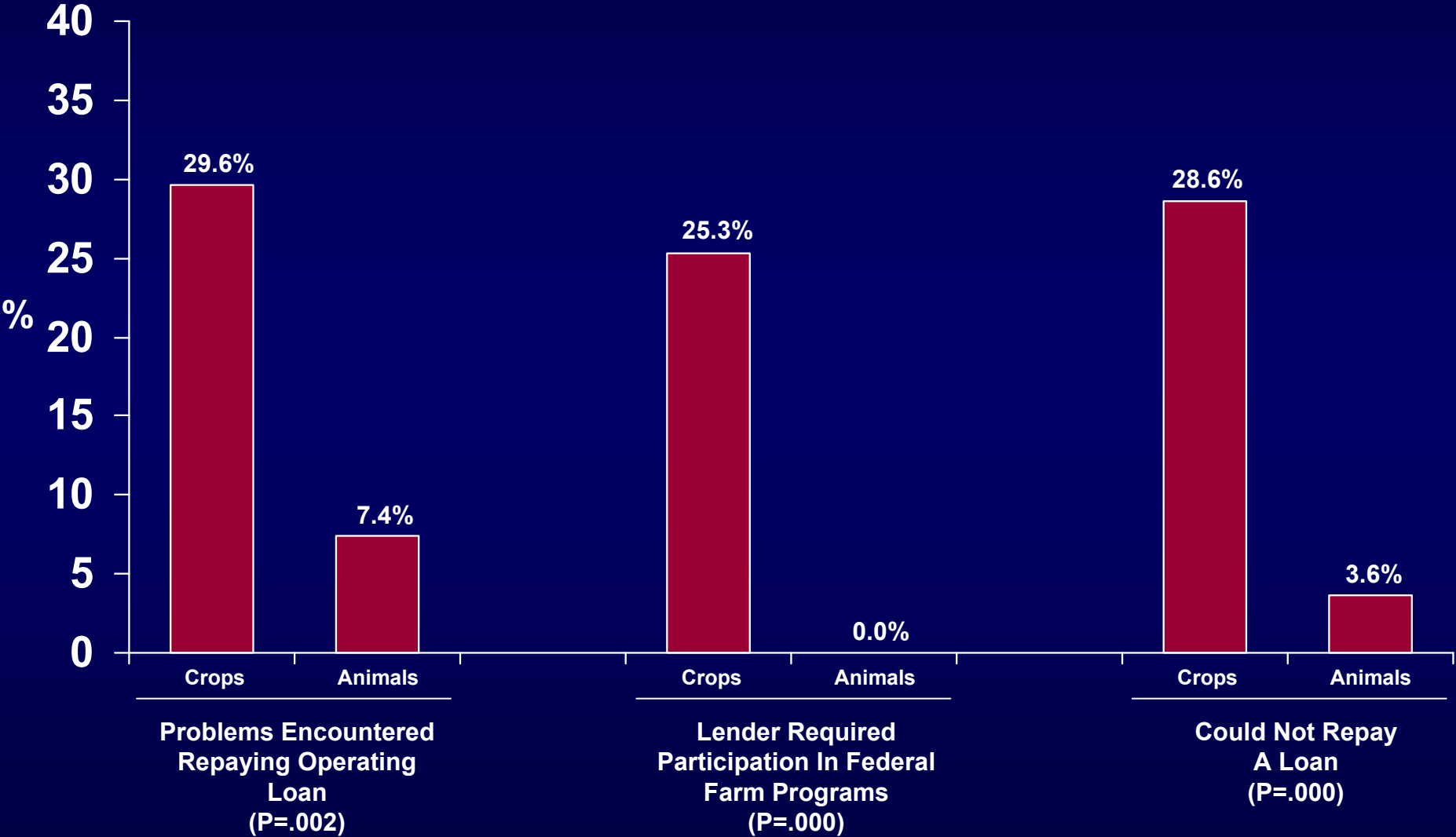
Figure 16: Significant Differences in Responses by Primary SIC Code



* Probability is not significant, graph shown only for comparison

Figure 17 shows operations, primarily involving crops are: 1) more likely to have encountered problems in repaying a loan; 2) the only group required to participate in farm programs; and, 3) is the group more likely to not be able to repay a loan.

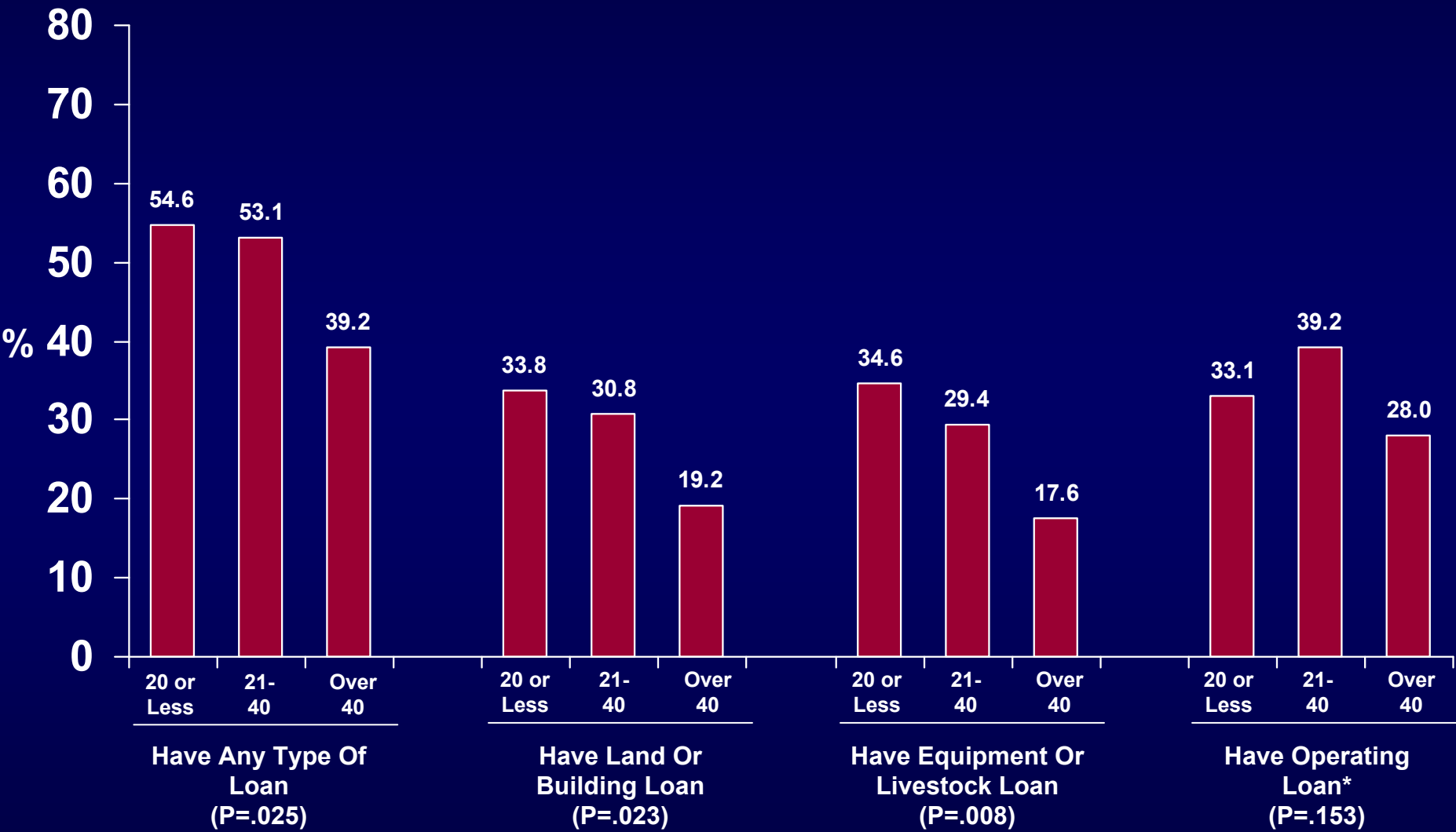
Figure 17: Significant Differences in Responses by Primary SIC Code



Sample Base: All respondents with Operating Loans (N=136) and All respondents with loan experience (N=209)

Years-in-operation effects are displayed in Figure 18. Clearly, the older operations are more likely to have either retired debt or simply work without it.

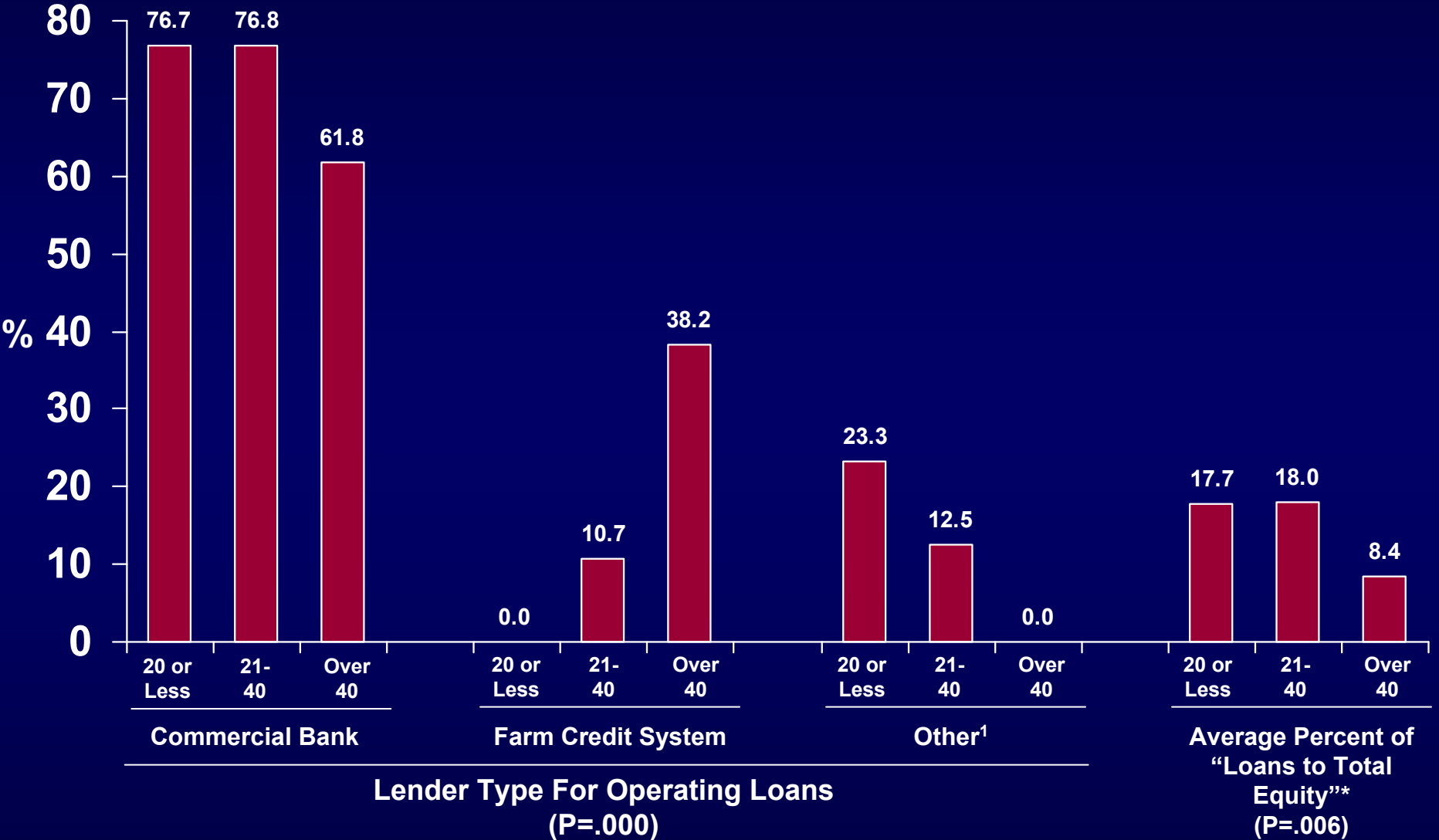
Figure 18: Significant Differences in Responses by Years In Operation



* Probability is not significant, graph shown only for comparison

In Figure 19 we see that “Years In Operations” affects the Type of Lender Used as well as Loan To Equity Ratio.

Figure 19: Significant Differences in Responses by Years In Operation

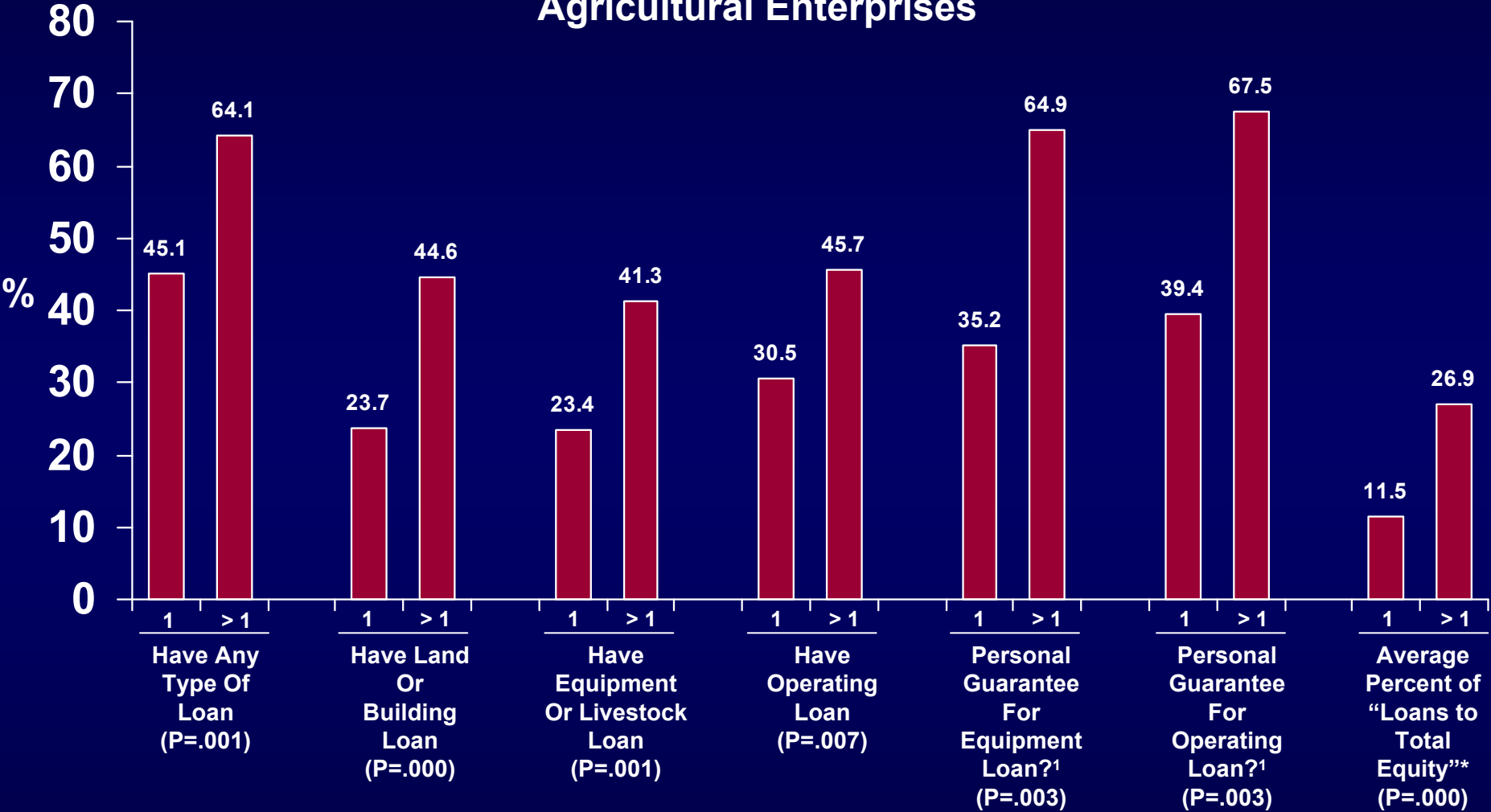


* The calculation includes all agricultural respondents, both those with and without debt. Considering only those with loans, the averages for the 3 levels are: 42.7, 39.2, 29.6 (P=.129)

¹ “Other” includes Credit Union, SBA

Finally, Figure 20 shows that those operations with a number of separate enterprises are more likely to have loans of all types, have to offer personal guarantees, and be more highly leveraged.

Figure 20: Significant Differences in Responses by Number of Separate Agricultural Enterprises



* The calculation includes all agricultural respondents, both those with and without debt. Considering only those with loans, the averages for the 2 levels are: 32.9, 49.8 (P=.001)

1 Special note regarding "Personal Guarantee": If their operation was in the form of a sole proprietorship any loan would by definition involve personal liability, but they may not have responded affirmatively.

Operating loan average amount is \$142,430 for those with 1 enterprise; \$710,111 for those with over 1 (P=.001).

Thank You