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**THE IMPACTS OF THE BUDGET
RECONCILIATION PROPOSAL ON
NORTH DAKOTA SMALL, MEDIUM,
AND LARGE FARMS**

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Executive Summary

- * The Budget Reconciliation proposal proposes to save \$12 billion in farm program costs over seven years. This would include a savings of \$2.4 billion from as yet somewhat undefined changes in Dairy, Peanuts, and EEP Programs.
- * Net farm income for the medium representative farm under the Budget Reconciliation proposal falls from \$92,796 in 1995 to \$65,937 in the year 2001 before recovering to \$70,917 in the year 2003.
- * Net farm income for the large representative farm under the Budget Reconciliation proposal falls from \$149,135 in 1995 to \$93,054 in the year 2001 before recovering to \$103,851 in the year 2003.
- * Net farm income for the small representative farm under the Budget Reconciliation proposal falls from \$43,852 in 1995 to \$30,034 in the year 2001 before recovering to \$30,167 in the year 2003.
- * If the FAPRI forecast price level were to change by 10 percent, net farm income would change 21 percent for the large farms, 16 percent for the medium farms, and 12 percent for the small farms.
- * Cropland prices paid by the medium representative farm would rise from 1994 to 1997, then fall for the balance of the forecast period. Prices of cropland in 2003 would be \$7 below the level of 1994.
- * Cash rental rates paid by the average representative farm would increase through 1999-2000 as a result of higher commodity prices in 1995-96. Cash rental rates would fall thereafter, ending the forecast period about \$6 more per acre than in 1994.

THE IMPACTS OF THE BUDGET RECONCILIATION PROPOSAL ON NORTH DAKOTA SMALL, MEDIUM, AND LARGE FARMS

Won W. Koo, Marvin Duncan, Richard D. Taylor, and Dwight G. Aakre*

The main objective of this analysis was to estimate the impact of the Budget Reconciliation proposal on the net income, cropland prices, cash rental rates, and debt-to-asset ratios of different sizes of representative farms selected from the North Dakota Farm and Ranch Business Management Association farm records. The secondary objective of this analysis was to estimate the reaction of net farm income to changes in the general price level of commodities.

The Budget Reconciliation proposal would reduce spending for government farm programs from its 1995 approved outlay level of \$14 billion to levels that would achieve a savings of \$9.6 billion over a seven-year period beginning in 1996. FAPRI assumes \$2.4 billion in budget savings to be obtained from the Dairy, Peanuts, and EEP Programs for a total budget savings of \$12.0 billions.

The Budget Reconciliation proposal decouples farm program payments from production by establishing a seven-year decreasing annual payment from a fixed pool of funds. Marketing loans at 70 percent of the preceding five-year national average cash price will be available. ARP is eliminated and conservation compliance is continued. CRP funding is maintained but renewals of contracts will be at rental rates no higher than 75 percent of current rates. However, farmers holding CRP contracts would be able to withdraw land from participation in the program without penalty and on limited notice to the government after the third year of the contract.

Procedure

This analysis is based on the North Dakota Representative Farm and Ranch Model which uses the FAPRI price projections as an input. The model has 12 representative farms, three farms in each of four regions: the Red River Valley (RRV), North Central (NC), South Central (SC), and Western (WEST). The farms in each region are representative of the large, medium, and small farms enrolled in the North Dakota Farm and Ranch Business Management Association. The representative farms are developed from the North Dakota Vocational Agriculture Department farm record system data provided by cooperating North Dakota farmers.

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This study focused on differences in net farm income, cropland prices, cash rental rates, and farm debt-to-asset ratios for large, medium, and small farms. Changes in cropland prices and cash rental rates are for land used to produce five major crops: wheat, barley, corn, soybeans, and sunflowers.

Characteristics of average representative farms in each region are shown in Table 1. The large farm is an average of the largest 25 percent of farms for the state or for each production region in cropland acres. The small representative farm is an average of the smallest 25 percent of the farms for the state or for each production region. The average large farm in the regions has between 2,170 cropland acres in the NC region and 2,523 cropland acres in the SC. The average medium farm in the regions has 1,007 cropland acres in the West region to 1,333 cropland acres in the NC region. The average small farm in the region has 373 cropland acres in the West region and 669 cropland acres in the NC region.

Net farm income per farm, cropland prices per acre, and cash rental rates for the large, medium, and small representative farms are calculated by using the North Dakota Representative Farm model operational at the Department of Agricultural Economics, Agricultural Experiment Station, North Dakota State University (Analysis of Alternative Farm Programs).

It is assumed that the farm equipment stock remains constant in the analysis. In other words, depreciation allowances are assumed to be invested back into farm equipment. A market determined capitalization rate is used in calculating cropland prices. Changes in residual income attributable to cropland determine the prices based on a weighted four-year moving average. Changes in cropland prices determine cash rental rates charged for rented cropland based on the market determined relationship of cropland prices to cash rental rates. Cash rental rates adjust on a three-year moving average of cropland prices. This study assumed that net farm income from livestock operations and production of other crops, including sugar beets, remained constant during the forecast period.

Farm income is reflected in allocation of income to owned cropland used in production of the crops in the analyses. Changes in allocation of income to cropland, given the market determined capitalization rate, results in changes in land prices. These land prices result in changes in cash rental rates farmers are willing to pay for cropland used in production of the crops in the analyses. Withdrawal for family living and reductions in owned cropland prices reduce farm asset levels, resulting in an increase of debt-to-asset ratios for representative farms.

The FAPRI updated projected commodity prices (December 6, 1995) for the Budget Reconciliation proposal are used in these analyses to predict commodity prices received by farmers in the region. The representative farm model is used to determine net farm income, land prices, cash rental rates, and farm debt-to-asset ratios under alternative spending caps.

Table 1. Characteristics of Representative Farms in North Dakota

	<u>Large</u>	<u>Medium</u>	<u>Small</u>
	-----acres-----		
<u>RRV</u>			
Cropland	2333	1140	397
Owned land	277	250	135
Wheat	949	453	105
Barley	237	97	37
Sunflower	220	90	61
Corn	169	111	91
Soybeans	471	227	48
<u>NC</u>			
Cropland	2170	1333	669
Owned land	613	474	297
Wheat	1327	741	422
Barley	363	310	148
Sunflower	162	84	17
Corn	0	0	0
Soybeans	0	0	0
<u>SC</u>			
Cropland	2523	1246	460
Owned land	835	416	234
Wheat	1400	670	282
Barley	278	121	27
Sunflower	390	189	29
Corn	66	33	9
Soybeans	17	5	3
<u>West</u>			
Cropland	2407	1007	373
Owned land	1097	480	253
Wheat	1686	731	288
Barley	100	79	17
Sunflower	0	0	0
Corn	0	0	0
Soybeans	0	0	0

Results

Net Farm Income for Representative Farms

Figures 1-3 show the state average net farm income for the representative farms under the Budget Reconciliation proposal. Under the Budget Reconciliation proposal, the average net farm income for the large farms in the four regions follow similar patterns. The rise in net farm income in 1995-96 is due mainly to increases in commodity prices. The lowest net farm income occurs in 2001-2002. The pattern is the same for the average medium farm. The average small farm follows a similar pattern but there is no recovery in income in 2003 except in the NC region. Table 2 shows the net farm income under the Budget Reconciliation Proposal for North Dakota for the large, medium, and small farms. FAPRI's price projections for 1996 are higher than the long-term average, but are lower than prices in 1995.

Figure 4 illustrates the impact of changes in the net farm income for the large, medium, and small farm as percentage increases or decreases occur in the FAPRI Base forecast for commodity prices. For the large farm, a 10 percent change in the price level of commodities amounts to a 21 percent change in net farm income. For the medium farm, a 10 percent change in the price level of commodities amounts to a 16 percent change in net farm income. For the small farm, a 10 percent change in the price level of commodities amounts to a 12 percent change in net farm income. The income lines are linear because under the Budget Reconciliation proposal payments to producers are fixed.

Debt-to-Asset Ratios for Representative Farms

Figure 5 indicates the debt-to-asset ratio forecast for the large, medium, and small representative farms under the Budget Reconciliation proposal. The debt-to-asset ratio for the medium representative farm was 0.34 at the start of the forecast period 1995-2003. The debt-to-asset ratio rises throughout the forecast period. In 2003 it is 0.41. The debt-to-asset ratio for the large representative farm follows the same pattern but the starting point is 0.31, and the ending point is nearly 0.39. However, in the case of the small representative farm, the debt-to-asset ratio is at 0.45 at the start of the forecast period but rises to 0.52 at the end of the forecast period. Table 3 indicates the debt-to-asset ratios for large, medium, and small farms under the Budget Reconciliation proposal. Table 4 indicates the North Dakota state average debt-to-asset ratios for large, medium, and small farms under the Budget Reconciliation proposal.

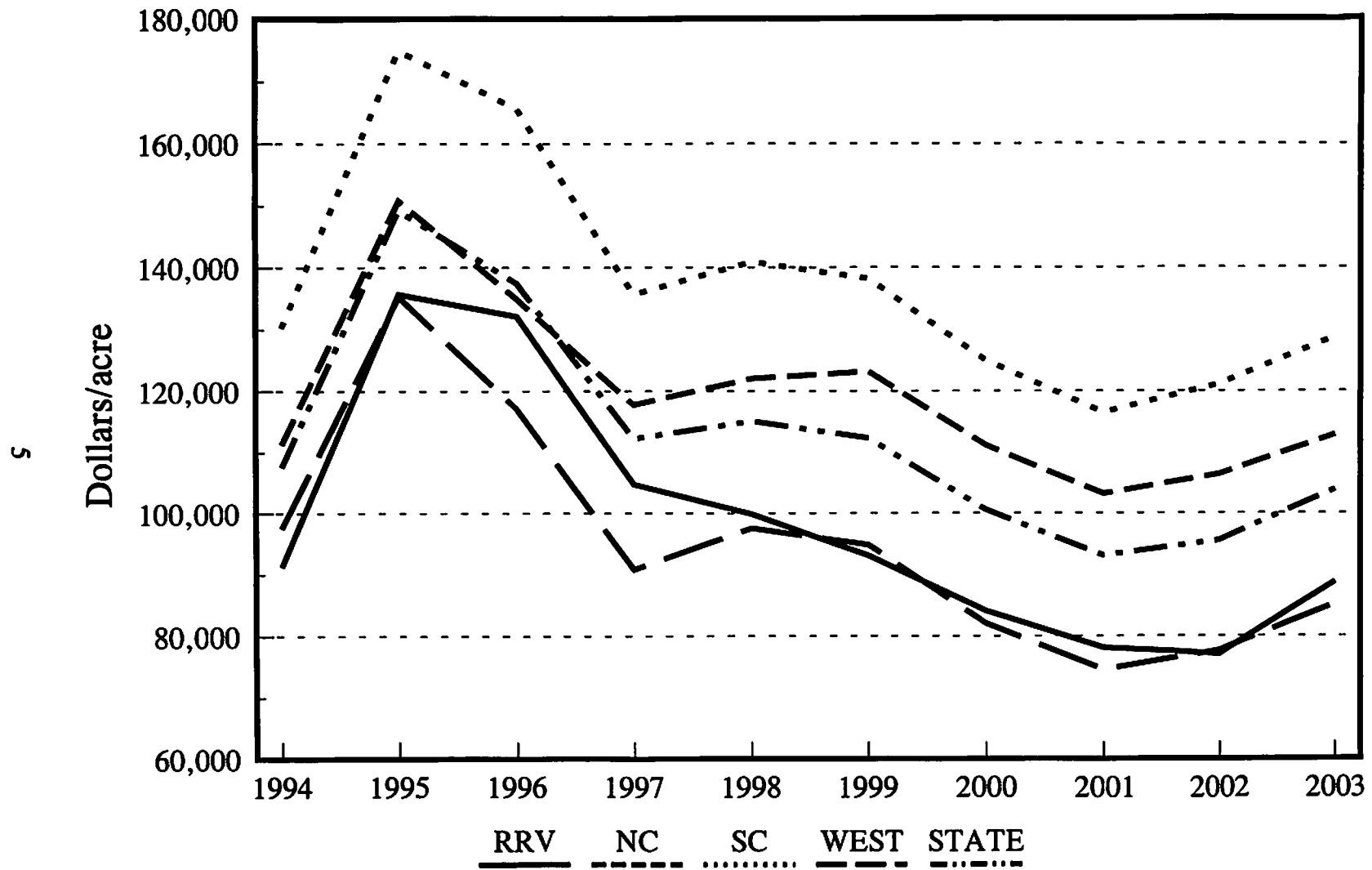


Figure 1. North Dakota net farm income for average large representative farm under the Budget Reconciliation proposal

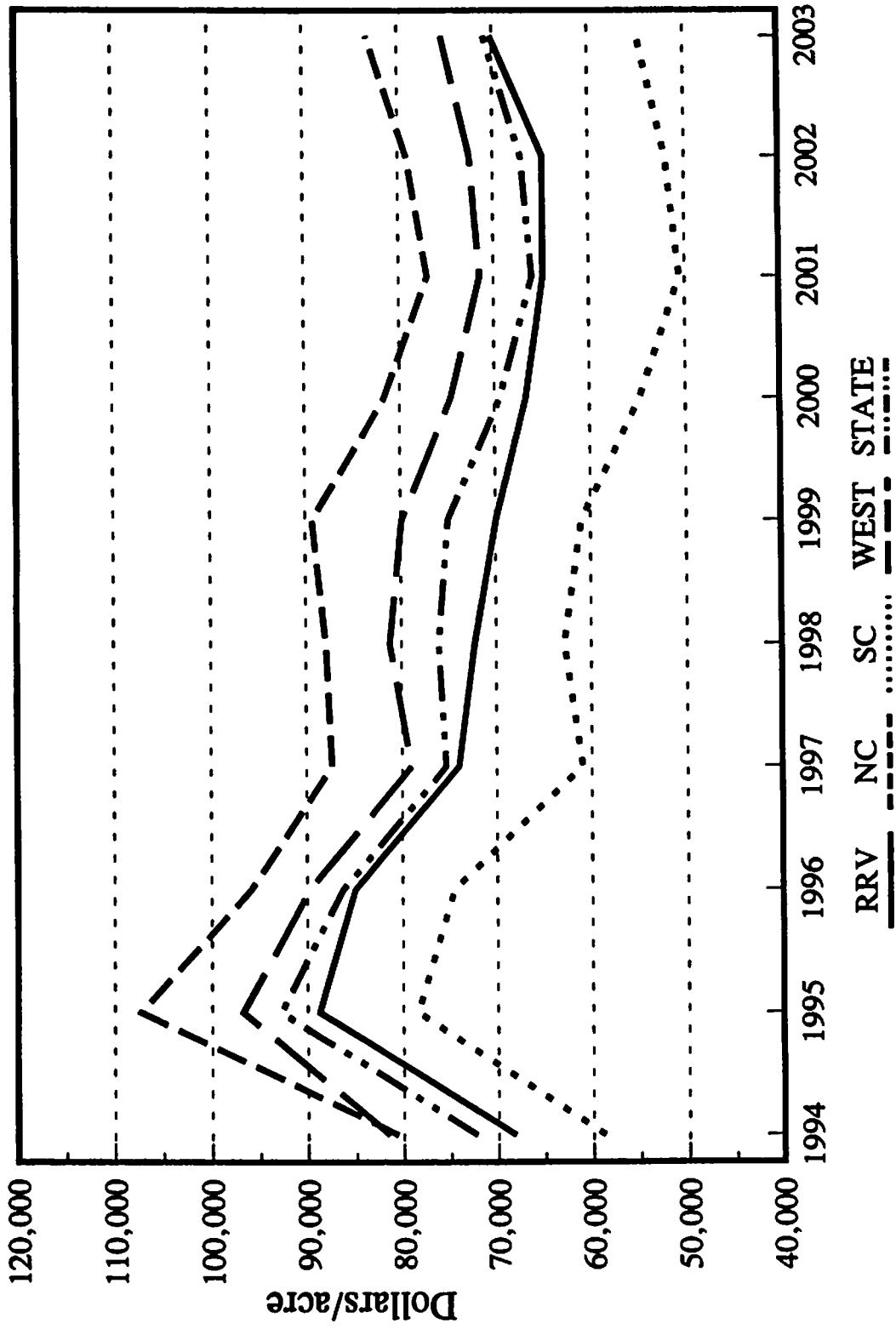


Figure 2. North Dakota net farm income for average medium representative farm under the Budget Reconciliation proposal

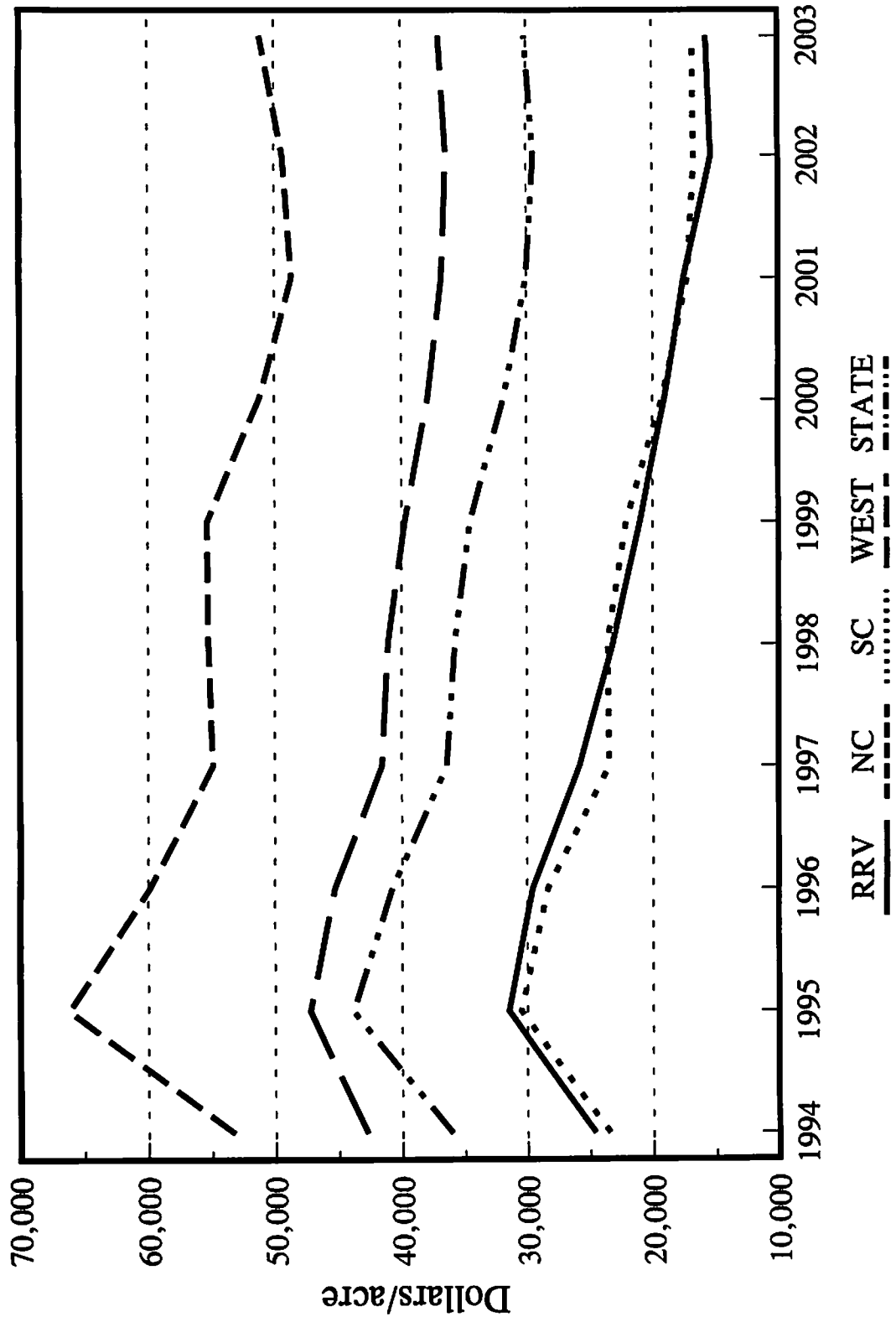
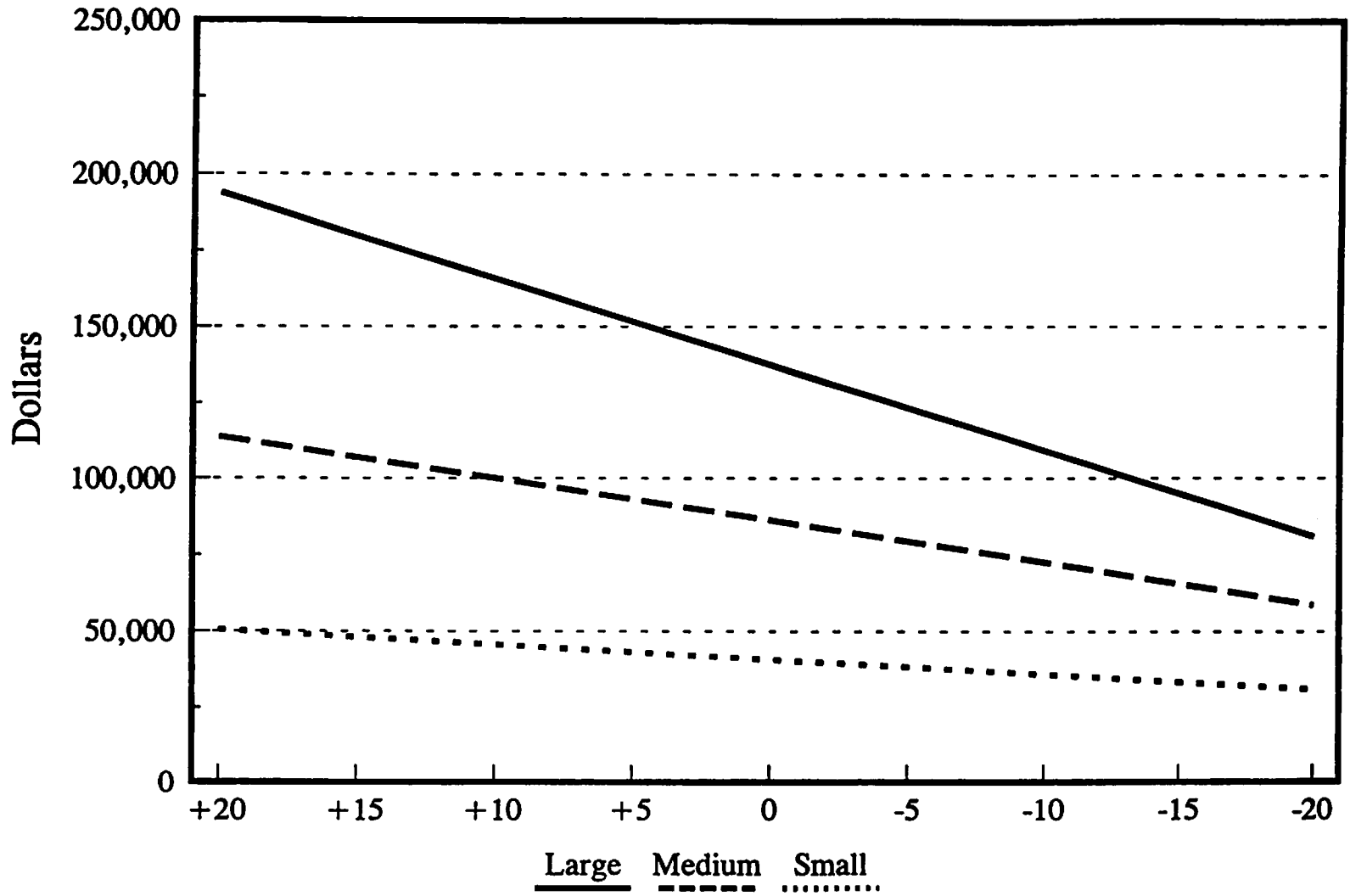


Figure 3. North Dakota net farm income for average small representative farm under the Budget Reconciliation proposal

Table 2. Net Farm Income Under the Budget Reconciliation Proposal

	RRV			NC			State Average
	Large	Med	Small	Large	Med	Small	
1994	91,256	68,187	24,604	111,294	80,635	53,223	72,282
1995	135,653	88,733	31,476	150,743	107,301	66,187	92,796
1996	132,119	85,015	29,556	134,891	95,831	59,872	86,271
1997	104,712	73,954	25,797	117,741	87,345	54,834	75,305
1998	99,861	72,250	23,153	122,030	87,911	55,228	76,039
1999	93,046	69,919	20,995	123,172	89,282	55,313	75,005
2000	84,085	66,673	19,049	111,119	81,658	51,205	69,417
2001	78,089	64,755	17,498	103,162	76,983	48,637	65,937
2002	77,053	64,766	15,324	106,370	79,124	49,349	67,081
2003	88,743	70,209	15,708	112,822	83,303	51,125	70,917
Average (1995-2000)	108,246	76,091	25,004	126,616	91,555	57,107	79,139
Average (1995-2003)	99,262	72,919	22,062	120,228	87,638	54,639	75,419
	SC			West			
	Large	Med	Small	Large	Med	Small	
1994	130,310	58,790	23,440	97,513	81,517	42,743	
1995	174,886	78,417	30,492	135,257	96,733	47,251	
1996	165,584	74,514	28,327	117,033	89,722	45,301	
1997	135,635	60,929	23,434	90,792	78,992	41,546	
1998	140,865	62,770	23,567	97,532	81,226	41,077	
1999	138,203	60,946	22,091	94,787	79,871	39,731	
2000	124,967	54,758	19,257	82,029	74,581	37,901	
2001	116,450	50,574	17,221	74,513	71,436	36,781	
2002	121,131	51,995	16,681	77,656	72,438	36,431	
2003	128,706	54,803	16,823	85,133	75,354	37,011	
Average (1995-2000)	146,690	65,389	24,528	102,905	83,521	42,134	
Average (1995-2003)	138,492	61,079	21,988	94,970	80,039	40,337	



Percent Price Change From FAPRI Base Forecast
Figure 4. Adjustments in net farm income representative farms with different price changes under the Budget Reconciliation proposal

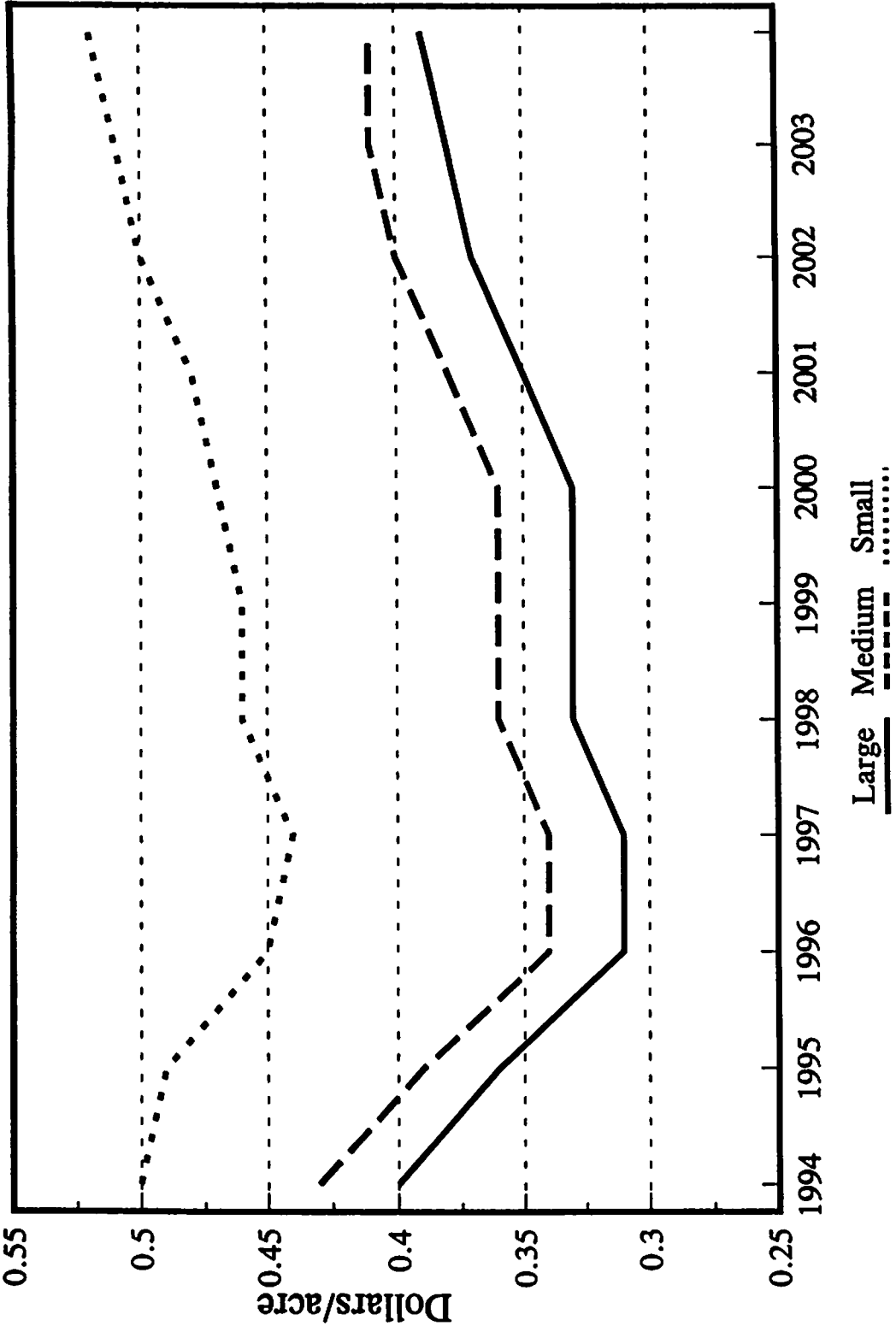


Figure 5. North Dakota debt-to-asset ratio for representative farms under the Budget Reconciliation proposal

Table 3. North Dakota Debt-to-Asset Ratio Under the Budget Reconciliation Proposal

Year	RRV			NC		
	Large	Med	Small	Large	Med	Small
1994	0.39	0.40	0.52	0.29	0.31	0.39
1995	0.36	0.37	0.49	0.25	0.28	0.35
1996	0.36	0.37	0.49	0.25	0.28	0.35
1997	0.37	0.38	0.49	0.26	0.29	0.36
1998	0.37	0.38	0.50	0.26	0.29	0.36
1999	0.38	0.39	0.51	0.26	0.29	0.36
2000	0.38	0.39	0.52	0.27	0.30	0.38
2001	0.40	0.41	0.54	0.28	0.31	0.39
2002	0.41	0.42	0.57	0.29	0.32	0.37
2003	0.41	0.43	0.58	0.29	0.31	0.37

Year	SC			WEST		
	Large	Med	Small	Large	Med	Small
1994	0.33	0.40	0.49	0.42	0.43	0.56
1995	0.30	0.35	0.44	0.35	0.37	0.51
1996	0.29	0.34	0.43	0.35	0.37	0.51
1997	0.30	0.36	0.45	0.38	0.40	0.53
1998	0.30	0.36	0.45	0.38	0.40	0.53
1999	0.31	0.37	0.46	0.39	0.41	0.54
2000	0.32	0.38	0.47	0.42	0.43	0.56
2001	0.33	0.40	0.49	0.46	0.46	0.58
2002	0.34	0.41	0.51	0.49	0.48	0.61
2003	0.34	0.42	0.52	0.51	0.50	0.62

Table 4. North Dakota State Average Debt-to-Asset Ratio Under the Budget Reconciliation Proposal

	Large	Med	Small
1994	0.36	0.39	0.49
1995	0.31	0.34	0.45
1996	0.31	0.34	0.44
1997	0.33	0.36	0.46
1998	0.33	0.36	0.46
1999	0.33	0.36	0.47
2000	0.35	0.38	0.48
2001	0.37	0.40	0.50
2002	0.38	0.41	0.51
2003	0.39	0.41	0.52

Average Cropland Prices

Figure 6 indicates the average price the North Dakota medium representative farm would be willing to pay for cropland on which to produce wheat, barley, corn, soybeans, and sunflowers. Recall that cropland prices are adjusted in the representative farm model on the basis of a weighted four-year moving average of the return to cropland. Cropland prices the average representative farm is willing to pay increase until 1997 because of higher net farm income in 1995 and 1996. Table 5 indicates the cropland prices the average representative farm would be willing to pay under the Budget Reconciliation proposal. All regions in the state follow the same pattern. Prices increase during 1996 and 1997 and then to fall throughout the balance of the forecast period.

Cash Rental Rates

Figure 7 indicates cash rental rates the average representative farm would be willing to pay for cropland on which to produce wheat, barley, corn, soybeans, and corn. Cash rental rates increase through 1999-2000 as a result of higher farm commodity prices in 1995 and 1996. Under the Budget Reconciliation proposal, the cash rental rate is \$6 higher by the end of the forecast period compared to the beginning of the period. Recall that cash rental rates in the representative farm model are based on a three-year moving average of cropland prices and an assumption that the representative farm does not change the proportion of cropland prices paid in cash rent. Table 6 indicates the cash rental rates the average profit representative farm would be willing to pay. Cash rent increases until 1999-2000 then falls throughout the balance of the forecast period.

Conclusions

The Budget Reconciliation proposal decouples farm program payments from production. It provides decreasing payments based on a fixed pool of funds. Marketing loans at 70 percent of the preceding five-year national average cash price are available. Net farm income initially rises in response to higher commodity prices, but generally declines after 1995. By 2003 net farm income again increases to a level slightly higher 1994.

The debt-to-asset ratios for large, medium, and small representative farms follow similar patterns. The debt-to-asset ratio for the small farm rises to 0.52 at the end of the forecast period, higher than for either the medium or the large farms.

Prices of cropland the medium representative farm is willing to pay rose from \$442 in 1994 to \$611 in 1997, but then fall to \$435 by 2003. Cash rent for cropland also rises early in the forecast period. In 1994, the state average cash rent is \$33, and by 1999-2000 it increases to \$45. In 2003, cash rent is \$39.

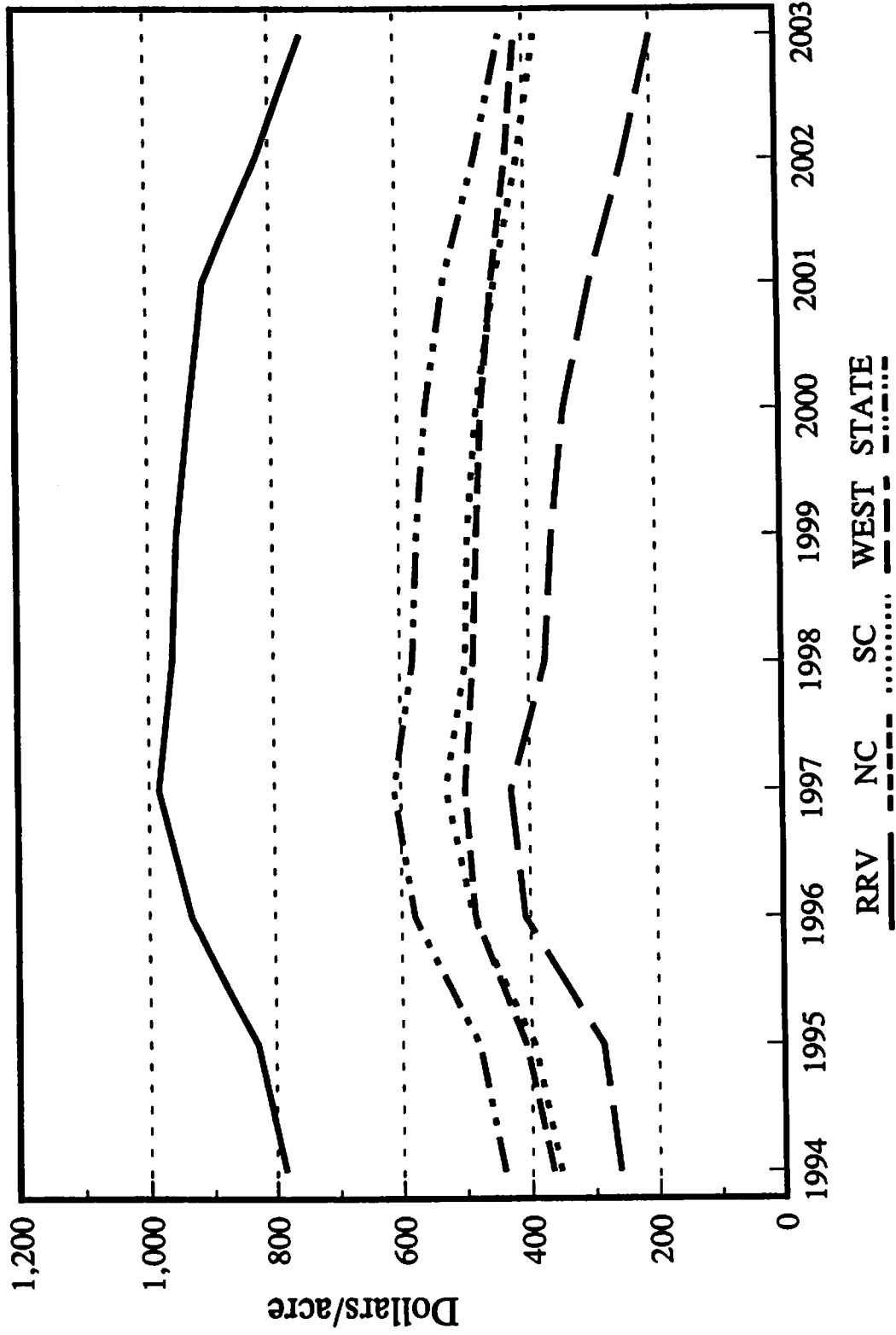


Figure 6. North Dakota land values under Budget Reconciliation proposal

Table 5. Land Prices Under the Budget Reconciliation Proposal

	RRV	NC	SC	WEST	State Average
	-----dollars/acre-----				
1994	785	367	355	262	442
1995	829	408	395	287	480
1996	935	485	488	408	579
1997	985	500	530	429	611
1998	963	486	498	375	580
1999	955	479	493	363	572
2000	934	470	477	342	556
2001	910	452	447	299	527
2002	821	428	410	245	476
2003	747	412	382	199	435
Average (1995-2000)	934	472	480	367	563
Average (1995-2003)	898	458	458	327	535

Table 6. Cash Rent Under the Budget Reconciliation Proposal

	RRV	NC	SC	WEST	State
	-----dollars/acre-----				
1994	54	24	29	27	33
1995	54	24	29	27	33
1996	55	25	31	28	35
1997	58	27	34	33	38
1998	63	30	39	39	43
1999	66	31	42	42	45
2000	67	31	42	40	45
2001	65	31	40	37	43
2002	64	30	39	35	42
2003	61	29	37	31	39
Average Change (1995-2003)	13.2	22.7	25.3	12.7	17.4

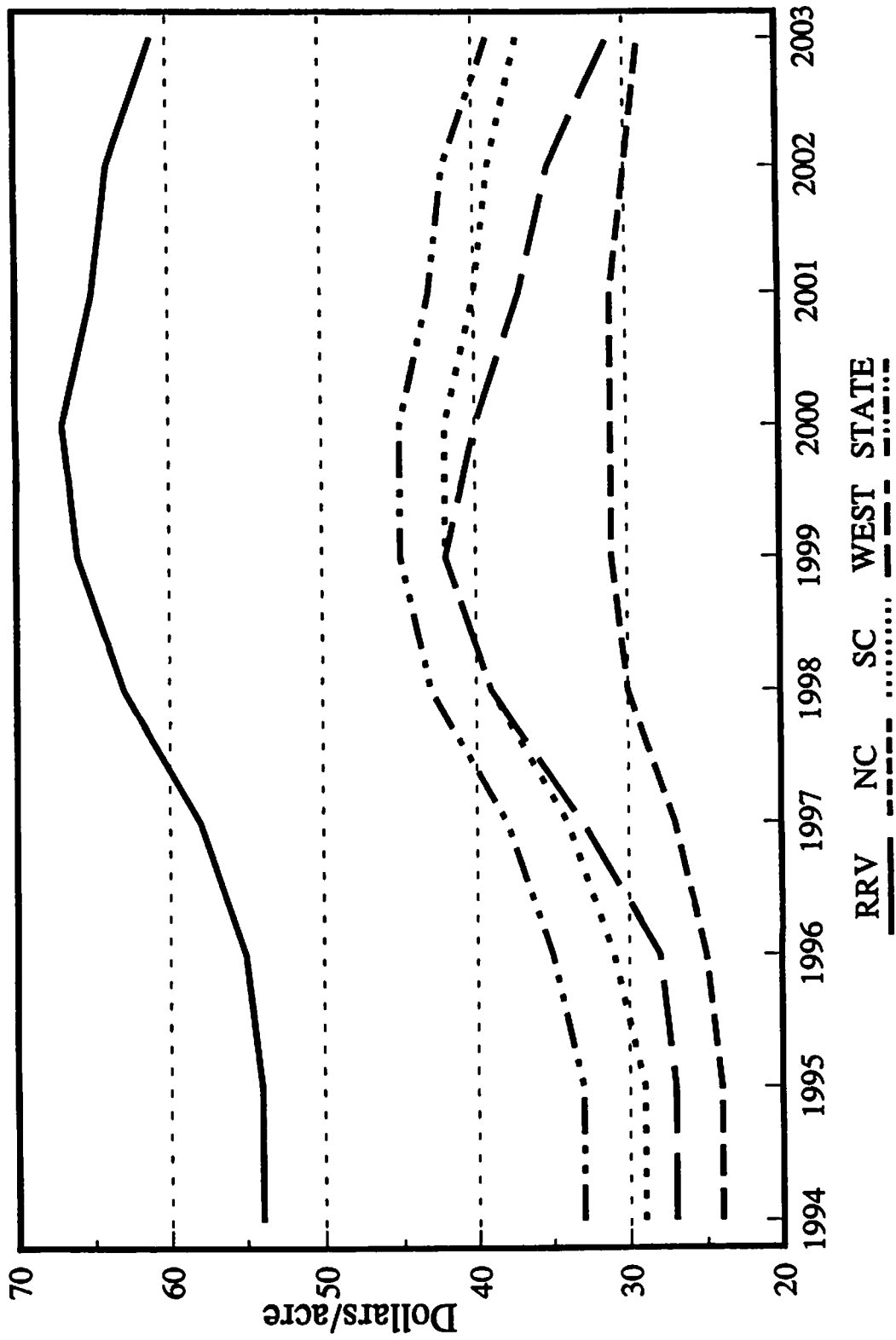


Figure 7. North Dakota cash rent under Budget Reconciliation proposal