RSQE
FORECASTS

Research Seminar in Quantitative Economics
The University of Michigan
Ann Arbor, Michigan 48109

Saul H. Hymans
Director

BENEFIC
DREMDUM
MICHFRNC

For release: 8/31/92

The Michigan Economic Outlook for 1992-94
August 1992 Forecast Update

Current State of the Economy

In the final quarter of 1991 and the initial quarter of 1992, the Michigan job market showed positive growth, following the declines that had characterized the state economy since mid-1990. Wage and salary employment turned down again in the second quarter of 1992, however, declining at an annual rate of 0.9 percent. Almost half of this decline was due to the Kroger strike, net of replacement workers. Without the strike, which was settled at the end of June, the annual rate of decline in employment would have been 0.5 percent.

A pattern of small offsetting quarterly changes in employment has left job levels virtually unchanged from mid-1991 to mid-1992. The current state employment profile thus might best be characterized as bumping along the zero growth line. These movements are shown in the left panel of Chart 1 (page 11 below), which displays the recent quarterly path of employment in Michigan.

The recent pattern of employment has not been uniform across industries. Since mid-1991, the manufacturing sector has gained employment (7,500 jobs), whereas the private nonmanufacturing and government sectors combined have lost a similar number of jobs (8,500, excluding the Kroger strike).

Manufacturing employment grew at annual rates of 1.1 percent and 3.1 percent, respectively, in the final two quarters of 1991. A weak January, due in large part to temporary layoffs of auto workers around the turn of the year, held the average for manufacturing employment in the first quarter of 1992 below the level of the preceding quarter. With April and May employment levels in manufacturing holding roughly at February-March levels, there was positive job growth for the second quarter, at an annual rate of 0.7 percent. Among the three manufacturing groupings in our model, all of the job gains occurred in nondurable goods, which offset small declines in motor vehicles. The gains in nondurables were across the board among industry components. Contributing positively to the local automotive situation throughout the first half of 1992 was the opening of Chrysler's Jefferson North facility and the phasing in of production workers, which was completed by July. The job profile in manufacturing weakened somewhat in June and July, centered in the automotive sector and its suppliers.

Employment in the private nonmanufacturing sector declined at an annual rate of 2.2 percent in the second quarter of 1992 (down 1.5 percent excluding the Kroger strike)--the sixth decline in the past seven quarters. All seven of the major industry divisions that constitute this sector in our model either suffered employment declines or

remained flat between the first and second quarters of 1992, with the largest losses occurring in services (4,300 jobs) and retail trade (2,700 jobs, excluding the Kroger strike).

Employment in the government sector rose in the second quarter of 1992, at an annual rate of 1.5 percent, after declining for four consecutive quarters. Most of this gain was in the state government component, and a good part of it was in state education. Although all three levels of government are caught in a revenue squeeze, local government employment in Michigan spiked up in July because the federal government allocated more than the usual amount of funds for youth programs, in response to the Los Angeles riots.

Although the monthly data contain substantial gyrations, the state unemployment rate measured on a quarterly basis has settled in the range of 9-9.4 percent since the beginning of 1991. The most recent rate, for July, was 9.4 percent. Lately, the differential between the state and U.S. rates has narrowed from its "common" two-percentage-point level; in the second quarter of 1992 it was 1.4 percentage points.

The revisions to state personal income released in July have been incorporated into this forecast. According to the revised data, nominal personal income grew by only 2.5 percent for 1991, about half the rate of 4.8 percent for 1990, and well below the rate of 7.2 percent for 1989. With local price inflation of 3.5 percent for 1991, as measured by the growth rate of the Detroit CPI, consumer purchasing power (real disposable income) declined by 0.4 percent in 1991.

In summary, the economic recovery to date has been so slow and uneven that re-employment has not taken hold in any permanent way. Where the Michigan economy moves from this position depends on a number of factors, including the downsizing and plant idlings announced by General Motors. Some of these factors are considered in the following section on major input assumptions.

Inputs to the Forecast

Improvement in the state economy is heavily dependent on the health of the national economy, but special state-specific factors will play a major role as well. Significant elements of the national outlook, from our forecast dated August 14, 1992, include the following:

- We are forecasting continued expansion for the national economy over the next two and a half years, but at a pace well below the norm for post-recession rebounds. Real GDP is projected to grow at an annualized rate of 1.3 percent in the current quarter, about the same as in the second quarter of '92. Real GDP growth accelerates to 3.1 percent in the fourth quarter of this year, peaks at 3.9 percent in the first quarter of '93, and then declines to 2.3 percent by the end of '94.

- The civilian unemployment rate is forecast to show little improvement during the rest of this year, averaging 7.6 percent in the fourth quarter compared to 7.7 percent for July. The unemployment rate falls slowly but steadily over the following two years, to about 7 percent by the end of 1993 and to 6.7 percent by the end of '94.

- Consumer price inflation, as measured by the U.S. Consumer Price Index, remains moderate through the end of 1994, rising slightly from an average of 2 3/4 percent (annual rate) during the second half of '92 to 3 1/4 percent during 1993, and just over 3 1/2 percent during 1994.

- Vehicle production is forecast to improve significantly over the forecast horizon in response to rising sales. Light vehicle sales recover from a 13 million unit pace in

the second quarter of 1992 to a 14 millon unit pace a year later. Sales of cars and light trucks rise to a pace of 14 1/4 million units by early 1994, and remain in that neighborhood for the rest of that year. Light vehicle sales are forecast to total 13.1 million units for 1992, 14 million units for 1993, and 14.3 million units for 1994.

- We have incorporated no new federal budget initiatives over the forecast horizon. We have assumed, however, that expenditures will remain within the budget caps established in the October 1990 budget agreement. Federal expenditures are projected to increase by 4.3 percent for fiscal '93 and 3.8 percent for fiscal '94, following an estimated 9 percent increase for fiscal '92. Federal receipts are forecast to grow by 6.9 percent for fiscal '93 and 6.6 percent for '94, compared to 2.6 percent for the current year. This pattern implies a deficit which shrinks steadily from $284 billion in the current fiscal year to $242 billion for fiscal 1994.

- We have assumed that the Federal Reserve will not ease monetary policy further, but will remain supportive of the economic recovery well into 1994. In the context of our forecast, such a policy stance allows short term interest rates to drift up by about 60 basis points by early 1994, and long term interest rates to decline by about 50 basis points before leveling off in early '94.

The second set of input assumptions influencing our outlook for Michigan is related to the local economic environment. The local inputs concern:

- scheduled automotive plant closings and openings, and white collar reductions-in-force;

- the closing of an air force base in Michigan by the federal government;

- the continued downsizing of employment by the state government in Lansing; and

- future wage, bonus, and profit-sharing payments to automotive workers, as well as the effect of funding caps on the income maintenance/job security provisions in the current auto contract.

In our forecast, we include only those automotive closings and openings that have been announced. One plant is beginning to recall workers to add a line (Flint Truck and Bus). Over our forecast horizon, to the end of calendar year 1994, three plants are scheduled to be closed (Pontiac CPC Engine, Willow Run, and Pontiac West), and a few

others will be affected by reassignment of work involving minimal job loss.

One line was eliminated at Flint Truck and Bus in January of 1991, when production of the Chevrolet Suburban and Blazer was transferred to Janesville, Wisconsin. Workers are now starting to be recalled to work on full-size passenger and commercial vans, with production being shifted from Lordstown, Ohio, and Scarborough, Ontario.

We assume that the Pontiac CPC Engine plant will close permanently in the spring of 1993, with a loss of about 500 jobs, as the 2.5 liter engine being produced there is replaced. We are assuming that Willow Run Assembly in Washtenaw County will be closed in September 1993, affecting 4,000 workers connected to the plant. We are also assuming that, consistent with past practices in these circumstances, the workers will receive some transitional income support for up to a year. One other plant closing in Michigan, Pontiac West, has also been announced, and we are assuming this will take place in mid-1994.

Two other Michigan plants were targeted for restructuring by the end of 1994 in the recent General Motors announcements: Detroit Plants 55 and 57 and Saginaw Grey Iron Foundry. In Detroit, the plan is only to relocate work within the complex. Saginaw, with 600 employees, will lose work to Defiance, Ohio, by the summer of 1994, but will pick up some from St. Catherine's, Ontario. The change in production, and the net employment loss, should be small.

In addition, GM plans to use a special early retirement program, together with the

non-replacement of jobs from normal attrition, to make a reduction of 9,000 in its (non-unionized) white-collar work force in the U.S. by the end of calendar year 1992. GM has also announced that it intends to reduce its white-collar work force by an additional 11,000 nationwide in 1993-94. The number of white-collar workers affected in Michigan is unknown, but based on the geographic distribution of the automotive work force and the presence of headquarters and the tech center in Michigan, a sensible estimate would appear to be 5,000 workers in fiscal year 1992, and an additional 3,000 per year for each of fiscal years 1993 and 1994. The loss of earnings will be mitigated because of corporate financial arrangements for the reductions-in-force, and we have made some allowance for this in our estimates.

The method of generating the projected impacts is similar to some of our previous analyses, linking our industrially-detailed input-output model of the state economy (REMI) to the state econometric model (SQEM). The linked model system is very well suited to this task because a fairly complete assessment of the ramifications can be made. Estimates of the indirect effects resulting from the reductions of the white-collar workers were generated in the input-output model by "reassigning" those workers to various service industry categories in order to calculate the appropriate supplier effects resulting from reductions of these types of workers. The direct job losses, of course, were assigned to the motor vehicle industry, where they appear in the official data. For the Willow Run shutdown, the indirect effects were muted in our estimates, since many of the suppliers in Michigan are expected to switch to alternate activity, including the supplying of the additional production activity at Arlington, Texas, after the consolidation with Willow

Run is carried out. Although much of the supplier activity in manufacturing was retained, the bulk of nonmanufacturing supplier activity was removed (e.g., public utilities, security guards, cleaning services, temporary help). The indirect effects were computed based on the number of workers producing vehicles at the plant; that is, the workers currently receiving income maintenance were excluded for the purpose of computing the supplier effects of job loss in the auto industry.

The federal government plans to close Wurtsmith Air Force Base in Oscoda, a community in northeast lower Michigan, in June 1993. Approximately 3,300 military personnel are expected to pull out in the first half of 1993. The employment data we use for federal government include only civilian jobs, amounting to 700 associated with the base (e.g., the PX, research and statistics, and the officers' club). We assume that the loss of these jobs will be phased over the first half of 1993.

The government of the State of Michigan has been downsizing since the beginning of 1991, largely through attrition and special early retirement programs. We are assuming that state government employment will be reduced by another 1,000 jobs over the next fiscal year due to attrition. Additional job losses (less than 500) are expected at the end of the current fiscal year because of the scheduled closure of two mental health facilities.

The 1990 auto contract settlement established wage and bonus provisions until September 1993. All of the workers covered by the contract are entitled to a performance bonus ("lump sum") payment equivalent to 3 percent of annual pay in 1991

and 1992. A provision in this contract also allows for a Christmas bonus in each year of the contract, the amount to be determined by the number of weeks worked in the year. That is, workers who have put in a designated minimum number of weeks will receive the maximum bonus of $600, and those who have worked less than the minimum number of weeks will receive a proportionately smaller bonus. The last five quarters of our forecast horizon, starting in the fourth quarter of 1993, will be covered by a new contract. We are assuming a carry-over contract for this period: a 3 percent increase in base pay starting in the fourth quarter of 1993, a lump sum payment equivalent to 3 percent of annual pay in 1994, and a continuation of the Christmas bonus in its current form.

We are assuming that profit-sharing payments in the auto industry, made in the first quarter of 1993 and based on profits for calendar year 1992, will amount to $11 million for Ford and Chrysler together. This is only a fraction of the profit-sharing payments of the late 1980s, but an improvement over the no-payment situation of the previous year. We are assuming additional improvements in payments based on profits for calendar year 1993, amounting to $34 million, with all of the Big Three companies participating to some extent.

Under the terms of the income maintenance/job security provisions in the current auto contract, auto workers who are laid off for longer than thirty-six weeks during the contract period are entitled to reinstatement with full pay and benefits (although not overtime and shift premiums). The obligation of each of the auto companies is limited to a preset funding level, or cap, during the life of the contract. If the limit is reached,

the workers on the program would no longer be classified as employed, nor would they receive additional (and taxable) income from this source. We are assuming that none of the companies will exceed their funding caps over the duration of the contract, and that the provisions of the program extend beyond the expiration date of the current contract.

The Forecast of the State Economy

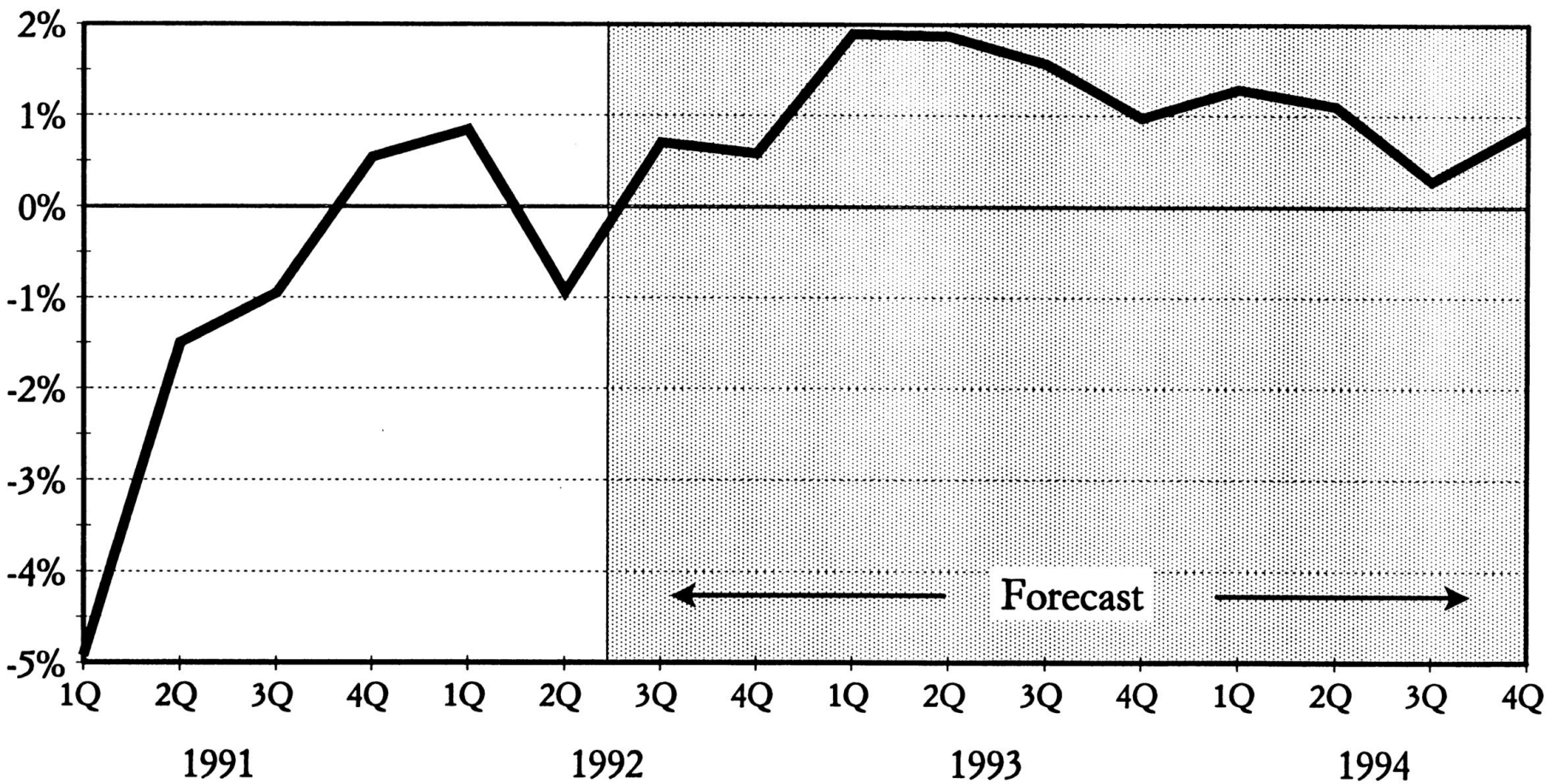
The Michigan economy is forecast to grow through the end of 1994, as shown in the right panel of Chart 1, but job growth will proceed slowly through the end of this year, averaging a projected 0.6 percent at annual rate during the second half of '92. Wage and salary employment growth accelerates to 1.9 percent during the first half of 1993 and then -- with the exception of two quarters -- slows steadily to 0.9 percent by the end of 1994. The two exceptions occur in the fourth quarter of 1993, when the closing of the Willow Run plant drops the growth rate to one percent, and the third quarter of 1994, when the closing of the Pontiac West facility drops the growth rate to 0.3 percent. This pattern of job growth generates 12,500 jobs during the second half of 1992, 61,300 jobs during 1993, and 35,000 jobs during 1994.

The modest job growth forecast during the second half of 1992 has little impact on the state unemployment rate, which remains in the neighborhood of 9.4 percent through the end of the year. Accelerating job growth drives the unemployment rate down to 8.9 percent by the end of 1993, but unemployment remains stuck in the 8.8 to 8.9 percent range throughout 1994. After declining by 1,800 jobs during the first half of 1992, manufacturing employment is forecast to show little improvement by the end of the year.

Chart 1

RSQE Forecast for 1992-94

Annual Rate of Growth, Wage and Salary Employment, Michigan



Manufacturing jobs increase during most of 1993 in response to a growing national economy and improvements in auto and truck production. The closing of the Willow Run plant in the fourth quarter of 1993 triggers a decline in manufacturing employment in that quarter, but the net gain during the year (from 1992.4 to 1993.4) is still 14,400 manufacturing jobs. Employment in this sector is fairly flat for the first half of 1994, but additional closings cut employment during the second half of that year, resulting in a decline of 5,300 manufacturing jobs during 1994.

Employment growth in the private nonmanufacturing sector is forecast to accelerate through spring 1993, peaking at an annualized rate of 1.8 percent, before declining to 1 1/4 percent in the final quarter of 1994. The return of striking Kroger workers contributes to the 9,400 jobs added during the second half of '92. Private nonmanufacturing employment increases by 38,800 jobs during 1993 and by 30,700 jobs during 1994, with 7 out of 10 new jobs in services and retail trade.

A summer employment program for disadvantaged youths, funded by the federal government, boosts government employment in the current quarter. After a return to a more normal level in the fourth quarter, government employment rises at an annualized rate of just over one percent during the first half of 1993 when Wurtsmith Air Force Base is closed. Government employment growth averages 1.5 percent per year over the remainder of the forecast period.

The recovery in employment over the next two and one half years generates steady improvement in personal income, which is forecast to increase by 4.3 percent for 1992 and

5.3 percent per year for both 1993 and '94, following a 2.5 percent increase for 1991. Wage and salary income is forecast to grow more slowly this year than over the next two years, and the continued decline in interest rates earlier this year translates into a decline in interest income and weaker personal income growth for '92.

Local inflation remains under control throughout the forecast period. Consumer price inflation, measured by the Detroit CPI, is forecast to rise from 2.2 percent for 1992 to 2.8 percent for 1993 and 3.5 percent for 1994. The combination of solid increases in personal income and moderate inflation yields three years of growth in consumer purchasing power, ranging from 2.6 percent for 1992 to 1.7 percent for 1994.

The projected impact on wage and salary employment of the automotive plant closings and openings, and the white collar reductions-in-force, is a cumulative loss of 3,400 jobs by the fourth quarter of 1992, and a further reduction of 9,200 jobs during 1993, for a total loss of 12,600 jobs over the two year period. The costs in general fund general purpose (GFGP) tax revenues are less than $1 million for fiscal year 1992, and about $1 million for fiscal year 1993. These estimates are as low as they are for a number of reasons:

1) A plant opening and a plant expansion are included at the beginning of the forecast period, and this has some neutralizing effect.

2) No closings are scheduled for fiscal year 1992. Willow Run will be down one month (with income maintenance) in fiscal year 1993, and one small plant, Pontiac CPC Engine, will be down for five months.

3) Most of the workers affected either have substantial (contract-determined) income support, or are likely to receive some transitional support if the

company adheres to its traditional arrangements.

4) The estimates of the supplier effects for Willow Run have been muted because much of the supplier activity is expected to be retained. This is largely because the closing of Willow Run (and the corresponding expansion of Arlington) is more a consolidation than a loss of production, and much of the supplier effect will be a shipping change rather than a sourcing change.

5) Much of the negative impact is attributable to the white-collar effect, where the spin-off job loss is considerably smaller than for the blue-collar workers.

The longer-term effects of the downsizing will be more severe, of course. More plants will be included, transitional income support will run out, and other supplier arrangements might evolve in the longer term. Our estimate is that by the end of calendar year 1994 the impact on wage and salary employment will be 23,000 jobs. With the impact of the major closings over our forecast horizon coming in fiscal year 1994, the loss of GFGP tax revenue jumps to $15 million. Both of these estimates represent a substantial increase from the previous year. GM is expected to announce some additional closings by the end of 1992. At this point, it is not known whether, or to what extent, Michigan will be affected.

The State Revenue Outlook

While the level of state economic activity is the major determinant of state revenues, legal decisions, legislative action, and accounting changes in recent years continue to modify the impact on revenues of economic factors. The personal income tax, single business tax, insurance company tax, and inheritance tax are all affected.

The legislature has enacted a one-year freeze on the assessed valuation of local

property for 1992, and there will be proposals to provide future property tax relief on the ballot in November. It is estimated that the current "property tax freeze" will reduce property tax credits for calendar 1992 by $75 million, raising income tax revenues by about $21 million in fiscal 1992 and by about $54 million in fiscal 1993. We have not incorporated any effect of future property tax relief into our forecast of 1993-94 income tax revenues.

The single business tax (SBT) was altered by a decision of the Michigan Court of Appeals in February 1991, which broadened the capital acquisition deduction (CAD) provision in the SBT. New legislation to modify the court decision was enacted in July of that year. The new law restricts the CAD by applying a new apportionment formula, retroactive to the 1990 tax year, and alters the formula that taxpayers use to allocate their business activity to Michigan. The new law also increases the gross receipts filing threshold for small firms. The new SBT legislation is estimated to lower revenues on a cash basis relative to the old law by $5 million for fiscal '92 and by $27 million for fiscal 1993. When the law is fully implemented for all of fiscal '94, the effect will be to lower revenues by $44 million.

Insurance companies pay either the single business tax or a retaliatory tax. Beginning January 1991, all insurance company payments have been excluded from the SBT and posted as insurance company tax. This distorts the growth rates for SBT and insurance company taxes for both fiscal 1991 and '92, but does not affect the total we report as business taxes.

Earlier this year the legislature enacted several changes in the inheritance tax designed to increase revenue in the short run, but to reduce revenues in the out years. Under the new law the time in which beneficiaries must pay the inheritance tax has been reduced from 9 months to approximately 3 months, or by September 1, 1992, whichever comes last. The effect of this provision will be to "front load" revenues into the current fiscal year for a one-time estimated gain of $50 million. In addition, the exemption for close relatives is scheduled to increase from the current $10,000 to $15,000 in 1993, $25,000 in 1994, and $50,000 in 1995. Family businesses and family farms will be totally exempt as of January 1993. These added exemptions are estimated to lower revenues by $5 million for fiscal 1993 and $11.5 million for fiscal 1994.

Our forecast of general fund general purpose (GFGP) tax revenues is presented in Table 1.[1] Income tax revenues increase by 2.5 percent for fiscal 1992, in contrast to a 2 percent decline for fiscal '91. Withholding is forecast to increase in line with the growth in wages and salaries, while quarterly estimated payments reflect the drop in interest income. Annual payments, which declined by 12 percent for fiscal 1991, are down only 2 percent for fiscal '92. More rapid growth in personal income and a projected decline in refunds generate a 6.1 percent increase in income tax revenues for fiscal 1993. A return to a more normal refund pattern in fiscal '94 slows the growth in income tax revenues to 4.2 percent.

---

[1]Revenue totals for fiscal 1990 and 1991 may not correspond to official figures since RSQE does not incorporate all of the yearend accounting adjustments that are included in the official data.

Table 1.

RSQE Forecast - General Fund General Purpose
State Tax Revenues by Fiscal Year
(millions of dollars, except as noted)

	Actual		RSQE Forecast		
	1990	1991	1992	1993	1994
Income Tax	3530	3460	3548	3764	3923
(% change)	(2.5)	(-2.0)	(2.5)	(6.1)	(4.2)
Consumption Taxes	1366	1355	1371	1433	1497
(% Change)	(2.7)	(-0.8)	(1.2)	(4.5)	(4.4)
Sales	610	617	632	668	703
Use	489	471	481	510	542
Other Consumption	267	267	259	255	252
Business Taxes	1661	1584	1524	1739	1874
(% Change)	(-4.3)	(-4.6)	(-3.8)	(14.1)	(7.8)
Single Business	1536	1393	1281	1485	1610
Other Business	125	191	243	254	264
Property Taxes	364	378	438	367	371
(% Change)	(5.2)	(3.7)	(15.9)	(-16.1)	(1.0)
Other GFGP Tax Revenue	42	44	48	46	46
GFGP Tax Revenue	6964	6821	6928	7349	7710
(% Change)	(0.7)	(-2.0)	(1.6)	(6.1)	(4.9)
Addenda					
Personal Income Adjusted (Billions $s)	151.8	154.3	158.7	166.1	174.9
Wages and Salaries (Billions $s)	101.5	103.2	106.8	112.0	117.5
Wage and Salary Employment (Thousands)	3972	3893	3874	3909	3960

Consumption taxes, which declined slightly in fiscal 1991, are forecast to increase by 1.2 percent for fiscal '92 and by about 4 1/2 percent in each of the next two fiscal years. Combined sales and use tax revenue growth lags behind income growth in fiscal '92 (2.2 percent compared to 3.9 percent), reflecting consumer caution during the year, but picks up to run ahead of income growth (6 percent compared to 5 percent) in fiscal 1993 when the recovery is more firmly established. In fiscal '94 sales and use tax revenue keeps pace with income growth of 5 1/2 percent. Revenue from alcohol and tobacco taxes is forecast to decline in each of the three fiscal years.

Business tax revenues, which declined by about 4 1/2 percent in each of the past two years, are forecast to decline by another 3.8 percent in the current year. Payment of a backlog of SBT refunds, amounting to about $100 million, more than accounts for the decline in fiscal '92. A more normal SBT refund pattern, stronger economic growth, and improvement in the auto sector all contribute to the renewed growth in business tax revenues forecast for fiscal 1993 (14.1 percent) and fiscal '94 (7.8 percent).

The one-time $50 million surge in inheritance tax revenues in fiscal '92 accounts for most of the swing in "property tax" (inheritance, intangibles and utility property taxes) revenues from fiscal 1992 to '93. A modest one percent increase is forecast for fiscal 1994.

GFGP tax revenues are projected to total $6.9 billion for fiscal 1992, a 1.6 percent increase over fiscal '91. Stronger economic growth over the next two years plus the special factors noted above generate increases of 6.1 percent for fiscal '93 and 4.9 percent for fiscal '94.

Prepared by
Joan P. Crary
George A. Fulton
Saul H. Hymans

RSQE FORECAST FOR 1992-94
STATE OF MICHIGAN
AUGUST 31, 1992

INDEX OF TABLES

TABLE 1 : MICHIGAN PERSONAL INCOME IN CURRENT DOLLARS

TABLE 2 : EMPLOYMENT IN MICHIGAN

TABLE 3 : MICHIGAN STATE GFGP TAX REVENUES

TABLE 4 : SELECTED MICHIGAN STATE TAX REVENUES

COMPLETE MODEL OUTPUT
- NON-ZERO ADJUSTMENT CONSTANTS
- EXOGENOUS VARIABLES
- ENDOGENOUS VARIABLES
- GROWTH RATES OF ENDOGENOUS VARIABLES

FORECAST BASED ON
THE ECONOMETRIC MODEL OF THE STATE OF MICHIGAN

Research Seminar in Quantitative Economics
The University of Michigan
Ann Arbor, Michigan 48109

Table 1: R.S.Q.E. Forecast
Michigan Personal Income
(Millions of Current Dollars,
Seasonally Adjusted at Quarterly Rates)

	1992:2 Actual	1992:3	1992:4	1993:1	1993:2	1993:3	1993:4	1994:1	1994:2	
Personal Income	45513.00	45967.50	46519.20	47223.60	47866.00	48504.40	49166.80	49865.30	50452.40	
	.089	.089	.089	.090	.090	.090	.090	.090	.090	.090 .090
Wage and Salary	26831.10	27100.30	27418.90	27834.80	28203.10	28548.50	28916.90	29257.40	29525.30	
Manufacturing	8796.30	8840.31	8992.46	9184.58	9322.51	9439.41	9569.28	9687.61	9734.87	
NonManufacturing	13626.00	13765.90	13920.80	14096.70	14282.20	14464.60	14648.60	14823.20	14996.10	
Government	4262.80	4346.32	4356.05	4402.20	4445.46	4489.76	4542.49	4588.32	4634.34	
Other	146.00	147.75	149.50	151.25	153.00	154.75	156.50	158.25	160.00	
	.120	.121	.122	.122	.123	.124	.124	.125	.125	.126 .127
Other Labor Income	3219.70	3269.79	3331.43	3400.30	3467.78	3532.37	3583.02	3643.55	3703.44	
Property and Proprietor Inc	9532.90	9557.69	9630.71	9757.96	9909.53	10070.10	10221.30	10369.00	10515.20	
Transfer Payment	8076.00	8210.19	8334.68	8482.08	8568.34	8665.21	8786.41	8988.74	9125.24	
Residence Adjust.	241.30	242.60	243.90	245.20	246.50	247.80	249.10	250.40	251.70	
LESS:										
Social Ins Contrib	2388.00	2413.10	2440.37	2496.66	2529.29	2559.64	2589.87	2643.80	2668.48	
Federal Pers Taxes	4150.05	4205.16	4266.68	4432.07	4509.73	4586.64	4661.86	4707.23	4772.82	
Mich Withholding	1075.90	1125.95	1131.62	1150.59	1167.37	1183.10	1199.89	1215.41	1227.59	
Disp Personal Income	40287.10	40636.40	41120.90	41641.00	42188.90	42734.70	43305.10	43942.70	44452.00	
ADDENDA:										
Consumer Price Index										
Detroit 1982-84=100	135.52	136.47	137.23	138.23	139.29	140.46	141.70	142.96	144.22	
Real Disp Income										
Millions of 1982-84 $	29727.70	29777.50	29964.50	30125.30	30289.40	30425.80	30561.40	30738.10	30822.00	

	1994:3	1994:4	1992 Average	1993 Average	1994 Average	91-92 %Change	92-93 %Change	93-94 %Change
Personal Income	51008.40	51612.40	182993.00	192761.00	202938.00	4.28	5.34	5.28
	.090	.090						
Wage and Salary	29769.10	30020.50	107884.00	113503.00	118572.00	3.98	5.21	4.47
Manufacturing	9779.23	9824.32	35328.10	37515.80	39026.00	4.01	6.19	4.03
NonManufacturing	15150.00	15312.20	54826.00	57492.10	60281.60	3.88	4.86	4.85
Government	4678.08	4720.49	17142.90	17879.90	18621.20	4.26	4.30	4.15
Other	161.75	163.50	587.50	615.50	643.50	3.16	4.77	4.55
	.126	.127						
Other Labor Income	3752.80	3810.28	12982.20	13983.50	14910.10	7.15	7.71	6.63
Property and Proprietor Inc	10658.60	10830.00	38236.80	39958.90	42372.80	0.13	4.50	6.04
Transfer Payment	9264.27	9411.43	32535.40	34502.00	36789.70	9.74	6.04	6.63
Residence Adjust.	253.00	254.30	967.80	988.60	1009.40	2.20	2.15	2.10
LESS:								
Social Ins Contrib	2689.35	2714.19	9613.17	10175.40	10715.80	4.76	5.85	5.31
Federal Pers Taxes	4834.45	4901.87	16814.20	18190.30	19216.40	-1.04	8.18	5.64
Mich Withholding	1238.65	1250.09	4386.07	4700.96	4931.74	2.60	7.18	4.91
Disp Personal Income	44935.30	45460.40	161793.00	169869.00	178790.00	4.92	4.99	5.25
ADDENDA:								
Consumer Price Index Detroit 1982-84=100	145.50	146.80	136.10	139.92	144.87	2.21	2.81	3.54
Real Disp Income Millions of 1982-84 $	30883.10	30967.40	118876.00	121402.00	123411.00	2.64	2.12	1.65

8/31/92 : RSQE Forecast

Table 2: R.S.Q.E. Forecast
Employment in Michigan
(Thousands of Persons, Seasonally Adjusted)

	1992:2 Actual	1992:3	1992:4	1993:1	1993:2	1993:3	1993:4	1994:1	1994:2
Total Employment	4182.67	4206.67	4217.19	4236.10	4258.14	4277.27	4290.71	4304.74	4317.63
Wage and Salary	3870.24	3877.03	3882.70	3900.96	3919.08	3934.37	3943.97	3956.66	3967.55
Manufacturing	903.36	898.68	903.52	911.18	916.97	919.73	917.87	918.89	918.80
Motor Vehicle	269.71	267.23	268.63	270.58	271.85	271.77	268.67	268.54	267.65
Other Durable	398.66	396.08	398.50	402.38	405.29	406.89	407.37	407.82	408.02
Nondurable	234.99	235.37	236.39	238.23	239.83	241.07	241.82	242.53	243.13
Private Nonmfg	2336.53	2339.94	2345.93	2354.75	2365.44	2375.73	2384.74	2393.90	2402.46
Construction	126.31	126.91	127.22	127.93	129.15	130.53	131.43	132.06	132.52
Trans, Com + Ut	156.70	156.77	156.96	157.52	158.20	158.84	159.47	160.23	160.96
Wholesale Trade	194.81	194.86	195.22	195.94	196.95	197.76	198.47	199.33	200.13
Retail Trade	720.61	721.62	723.00	724.77	726.95	728.82	730.49	732.16	733.60
Fin, Ins + R.E.	188.51	188.52	188.64	188.81	189.02	189.25	189.39	189.67	189.96
Services	940.63	942.27	945.88	950.74	956.12	961.48	966.44	971.41	976.29
Mining	8.95	8.99	9.02	9.04	9.06	9.06	9.05	9.03	9.01
Government	630.35	638.41	633.25	635.03	636.67	638.91	641.36	643.87	646.29
Federal	57.32	57.57	57.64	57.42	57.09	57.16	57.23	57.30	57.38
State	162.35	164.54	163.54	164.45	165.29	166.10	166.98	167.95	168.88
Local	410.69	416.30	412.07	413.16	414.29	415.65	417.15	418.62	420.03
Non Wage and Salary	312.43	329.64	334.49	335.14	339.06	342.89	346.73	348.08	350.08
Labor Force	4594.00	4643.25	4656.58	4671.45	4684.65	4698.30	4711.23	4723.94	4736.02
Unemployment	411.00	436.58	439.39	435.35	426.50	421.03	420.53	419.19	418.39
Unemployment Rate (%)	8.95	9.40	9.44	9.32	9.10	8.96	8.93	8.87	8.83
ADDENDA: U.S. DATA (Billions of 1987 $, except where noted)									
Gross Dom Product	4890.50	4906.11	4943.82	4991.66	5035.82	5073.86	5106.94	5141.30	5174.16
Business Fixed Invest	511.70	513.12	517.37	523.42	531.30	539.30	546.75	552.95	558.43
Gross Auto Product	115.50	117.65	126.35	133.93	137.71	139.94	141.34	142.86	144.25
Personal Cons Expend New Autos	75.50	78.87	82.97	85.87	87.05	87.87	88.28	89.27	89.87
Unit Car Sales (mil)	8.50	8.71	9.07	9.32	9.44	9.51	9.53	9.59	9.61
Unemployment Rate (%)	7.50	7.66	7.62	7.48	7.30	7.14	7.03	6.93	6.85
Personal Consumption Deflator 1982=100	123.34	124.36	125.36	126.37	127.40	128.49	129.62	130.78	131.95
Consumer Price Index 1982-84=100	139.80	140.84	141.69	142.74	143.84	145.03	146.29	147.57	148.87

	1994:3	1994:4	1992 Average	1993 Average	1994 Average	91-92 %Change	92-93 %Change	93-94 %Change
Total Employment	4325.58	4335.61	4201.05	4265.55	4320.89	1.85	1.54	1.30
Wage and Salary	3970.36	3978.93	3877.33	3924.60	3968.37	0.05	1.22	1.12
Manufacturing	913.64	912.61	901.84	916.44	915.98	0.30	1.62	-0.05
Motor Vehicle	263.71	262.87	269.21	270.72	265.69	0.84	0.56	-1.86
Other Durable	406.61	406.06	397.97	405.48	407.13	-1.25	1.89	0.41
Nondurable	243.31	243.67	234.67	240.24	243.16	2.41	2.37	1.22
Private Nonmfg	2408.06	2415.42	2343.00	2370.17	2404.96	-0.07	1.16	1.47
Construction	132.87	133.11	126.85	129.76	132.64	-1.59	2.30	2.22
Trans, Com + Ut	161.37	162.02	156.72	158.51	161.15	-0.10	1.14	1.67
Wholesale Trade	200.74	201.38	194.97	197.28	200.40	-1.43	1.19	1.58
Retail Trade	733.57	734.56	723.11	727.76	733.47	-0.85	0.64	0.79
Fin, Ins + R.E.	190.12	190.37	188.94	189.12	190.03	0.02	0.09	0.48
Services	980.41	985.04	943.42	958.69	978.29	1.03	1.62	2.04
Mining	8.97	8.93	8.98	9.05	8.99	-1.82	0.78	-0.73
Government	648.66	650.91	632.49	637.99	647.43	0.12	0.87	1.48
Federal	57.45	57.52	57.66	57.22	57.41	-0.20	-0.75	0.33
State	169.80	170.68	162.57	165.71	169.32	-0.95	1.93	2.18
Local	421.42	422.71	412.27	415.06	420.69	0.60	0.68	1.36
Non Wage and Salary	355.22	356.68	323.71	340.96	352.52	29.91	5.33	3.39
Labor Force	4745.90	4756.05	4627.54	4691.41	4740.47	1.87	1.38	1.05
Unemployment	420.31	420.44	426.49	425.85	419.58	1.97	-0.15	-1.47
Unemployment Rate (%)	8.86	8.84	9.22	9.08	8.85	NA	NA	NA
ADDENDA: U.S. DATA (Billions of 1987 $, except where noted)								
Gross Dom Product	5205.33	5235.60	4903.53	5052.07	5189.10	1.71	3.03	2.71
Business Fixed Invest	563.41	567.97	509.50	535.19	560.69	1.86	5.04	4.76
Gross Auto Product	145.23	145.95	117.67	138.23	144.57	7.69	17.47	4.59
Personal Cons Expend								
New Autos	90.29	90.48	79.14	87.27	89.98	8.97	10.27	3.11
Unit Car Sales (mil)	9.62	9.61	8.65	9.45	9.60	3.14	9.26	1.62
Unemployment Rate (%)	6.78	6.73	7.50	7.23	6.82	NA	NA	NA
Personal Consumption								
Deflator 1982=100	133.14	134.36	123.84	127.97	132.56	3.23	3.33	3.58
Consumer Price Index								
1982-84=100	150.20	151.56	140.26	144.48	149.55	2.98	3.01	3.51

8/31/92 : RSQE Forecast

Table 3: R.S.Q.E. Forecast
Michigan State GFGP Tax Revenues by Fiscal Years
(Millions of Current Dollars, Not Seasonally Adjusted)

	1992:2 Actual	1992:3	1992:4	1993:1	1993:2	1993:3	1993:4	1994:1	1994:2
NET PERS INCOME TAX	1161.70	904.86	916.58	1006.68	1243.51	961.67	960.88	1048.26	1300.85
LESS: Local Dist	115.90	73.94	83.29	82.86	116.63	80.28	87.11	87.67	121.32
Camp Fund	0.00	1.50	0.00	0.00	0.00	1.50	0.00	0.00	0.00
GFGP INCOME TAX	1045.80	829.42	833.29	923.81	1126.88	879.89	873.77	960.59	1179.53
CONSUMPTION TAXES									
Sales	163.73	163.55	176.42	148.77	171.21	172.00	185.59	156.57	180.00
Cigarette Excise	46.10	49.46	47.35	43.27	45.69	48.46	46.43	42.45	44.80
Beer and Wine	13.90	14.86	11.17	10.71	12.94	14.13	11.25	10.80	13.03
Liquor Specific	5.10	5.24	6.35	4.31	5.09	5.24	6.37	4.33	5.11
Use	125.60	129.19	121.76	117.49	133.39	137.37	129.65	125.14	141.82
GFGP CONSUM TAXES	354.42	362.30	363.06	324.56	368.32	377.21	379.30	339.29	384.76
BUSINESS TAXES									
Single Business	395.80	339.77	342.26	326.94	432.88	383.27	375.77	354.40	474.19
Insur Co Premium	0.00	200.00	0.00	0.00	0.00	208.00	0.00	0.00	0.00
Oil + Gas Severance	10.10	11.40	11.07	11.23	11.69	11.79	11.57	11.72	12.11
GFGP BUSINESS TAXES	405.90	551.17	353.34	338.17	444.56	603.06	387.34	366.12	486.30
PROPERTY TAXES									
Inheritance	41.10	78.18	28.29	28.40	26.01	26.11	26.20	26.29	25.60
Utility Property	0.00	74.98	73.98	-0.00	0.00	76.22	74.92	-0.00	0.00
Intangibles	108.00	0.00	0.00	0.00	108.18	0.00	0.00	0.00	114.19
GFGP PROPERTY TAXES	149.10	153.15	102.27	28.40	134.19	102.33	101.12	26.29	139.79
OTHER GFGP TAXES	0.00	48.00	0.00	0.00	0.00	46.00	0.00	0.00	0.00
TOTAL GFGP TAXES	1955.22	1944.05	1651.95	1614.94	2073.95	2008.49	1741.53	1692.29	2190.38
ADDENDA									
Pers Income Adjust	39825.00	40170.40	40624.90	41238.20	41827.00	42398.80	42970.30	43520.40	43995.60
Total Employment	4182.67	4206.67	4217.19	4236.10	4258.14	4277.27	4290.71	4304.74	4317.63
Wage + Sal Income	26831.10	27100.30	27418.90	27834.80	28203.10	28548.50	28916.90	29257.40	29525.30

	1994:3	1994:4	Fiscal 1992	Fiscal 1993	Fiscal 1994	91-92 %Change	92-93 %Change	93-94 %Change
NET PERS INCOME TAX	996.56	1006.32	3909.36	4128.43	4306.54	3.00	5.60	4.31
LESS: Local Dist	86.39	91.48	359.94	363.06	382.49	7.77	0.87	5.35
Camp Fund	1.50	0.00	1.50	1.50	1.50	0.00	0.00	0.00
GFGP INCOME TAX	908.66	914.85	3547.92	3763.87	3922.55	2.54	6.09	4.22
CONSUMPTION TAXES								
Sales	180.69	194.50	631.62	668.40	702.84	2.32	5.82	5.15
Cigarette Excise	47.53	45.52	188.46	-3.7 184.77	-3.6 181.21	-3.55	-1.96	-1.93
Beer and Wine	14.21	11.30	48.86	48.96	49.30	-2.47	0.20	0.70
Liquor Specific	5.26	6.39	21.24	20.99	21.07	0.17	-1.16	0.38
Use	145.53	137.04	480.59	510.02	542.15	2.04	6.12	6.30
GFGP CONSUM TAXES	393.22	394.75	1370.77	1433.14	1496.57	1.16	4.55	4.43
BUSINESS TAXES								
Single Business	406.05	403.23	1280.87	1485.35	1610.42	-8.05	15.96	8.42
Insur Co Premium	216.00	0.00	200.00	208.00	216.00	42.05	4.00	3.85
Oil + Gas Severance	12.19	12.10	42.90	41.8 45.78	43.3 47.59	-14.71	6.71	3.95
GFGP BUSINESS TAXES	634.24	415.33	1523.77	1739.13	1874.01	-3.81	14.13	7.76
PROPERTY TAXES								
Inheritance	25.64	25.68	182.08	108.81	103.73	50.97	-40.24	-4.67
Utility Property	77.89	76.76	147.68	150.20	152.80	1.92	1.71	1.73
Intangibles	0.00	0.00	108.00	108.18	114.19	-3.83	0.17	5.55
GFGP PROPERTY TAXES	103.53	102.44	437.75	367.19	370.73	15.87	-16.12	0.96
OTHER GFGP TAXES	46.00	0.00	48.00	46.00	46.00	8.60	-4.17	0.00
TOTAL GFGP TAXES	2085.66	1827.37	6928.22	7349.33	7709.86	1.57	6.08	4.91
ADDENDA								
Pers Income Adjust	44433.50	44915.20	158707.00	166089.00	174920.00	2.85	4.65	5.32
Total Employment	4325.58	4335.61	4177.00	4247.17	4309.66	0.85	1.68	1.47
Wage + Sal Income	29769.10	30020.50	106836.00	112005.00	117469.00	3.57	4.84	4.88
8/31/92 : RSQE Forecast					Run 9	2.9	4.2	5.9

Table 4: R.S.Q.E. Forecast
Selected Michigan State Tax Revenues by Fiscal Years
(Millions of Current Dollars, Not Seasonally Adjusted)

	1992:2 Actual	1992:3	1992:4	1993:1	1993:2	1993:3	1993:4	1994:1	1994:2
NET PERS INCOME TAX	1161.70	904.86	916.58	1006.68	1243.51	961.67	960.88	1048.26	1300.85
Withheld	1077.00	1093.26	1163.07	1151.76	1168.57	1148.79	1233.17	1216.64	1228.85
Quarterly	159.90	102.19	29.89	112.74	160.41	102.43	30.05	113.80	170.87
Annual	244.80	22.41	18.62	40.17	245.52	22.45	18.66	42.82	264.13
LESS: Refunds	331.00	313.00	295.00	298.00	331.00	312.00	321.00	325.00	363.00
LESS: Local Dist	115.90	73.94	83.29	82.86	116.63	80.28	87.11	87.67	121.32
Camp Fund	0.00	1.50	0.00	0.00	0.00	1.50	0.00	0.00	0.00
GFGP INCOME TAX	1045.80	829.42	833.29	923.81	1126.88	879.89	873.77	960.59	1179.53
GROSS SALES TAX	714.30	712.60	755.93	655.14	753.37	750.96	795.57	689.40	791.70
Auto Sales	116.20	113.32	94.60	117.07	136.58	123.74	101.40	124.11	143.86
Other Sales	598.10	599.28	661.33	538.07	616.79	627.22	694.17	565.29	647.84
LESS: Local Dist	107.14	106.89	113.39	98.27	113.01	112.64	119.34	103.41	118.76
School Aid	428.58	427.56	453.56	393.08	452.02	450.57	477.34	413.64	475.02
Comp Trans	12.60	12.35	10.31	12.76	14.89	13.49	11.05	13.53	15.68
Health Init	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
GFGP SALES TAX	163.73	163.55	176.42	148.77	171.21	172.00	185.59	156.57	180.00
GROSS CIGARETTE TAX	60.70	65.08	62.30	56.93	60.12	63.77	61.09	55.86	58.94
LESS: School Aid	4.90	5.21	4.98	4.55	4.81	5.10	4.89	4.47	4.72
Health + Safe	9.70	10.41	9.97	9.11	9.62	10.20	9.77	8.94	9.43
GFGP CIGARETTE TAX	46.10	49.46	47.35	43.27	45.69	48.46	46.43	42.45	44.80
GROSS SINGLE BUS TAX	505.50	400.10	433.18	421.31	543.98	444.41	467.74	450.58	587.26
LESS: Refunds	22.20	22.00	22.00	22.00	22.00	22.00	23.00	23.00	23.00
Net Single Bus Tax	483.30	378.10	411.18	399.31	521.98	422.41	444.74	427.58	564.26
LESS: Local Dist	87.50	38.33	68.92	72.37	89.10	39.13	68.97	73.18	90.07
GFGP SINGLE BUS TAX	395.80	339.77	342.26	326.94	432.88	383.27	375.77	354.40	474.19
GROSS INTANGIBLES TAX	117.50	0.00	0.00	0.00	117.68	0.00	0.00	0.00	123.69
LESS: Local Dist	9.50	0.00	0.00	0.00	9.50	0.00	0.00	0.00	9.50
GFGP INTANGIBLES TAX	108.00	0.00	0.00	0.00	108.18	0.00	0.00	0.00	114.19

	1994:3	1994:4	Fiscal 1992	Fiscal 1993	Fiscal 1994	91-92 %Change	92-93 %Change	93-94 %Change
NET PERS INCOME TAX	996.56	1006.32	3909.36	4128.43	4306.54	3.00	5.60	4.31
Withheld	1202.80	1284.75	4398.15	4632.19	4881.46	3.89	5.32	5.38
Quarterly	110.81	35.65	405.99	405.47	425.53	-4.04	-0.13	4.95
Annual	23.94	19.93	325.21	326.77	349.54	-2.11	0.48	6.97
LESS: Refunds	341.00	334.00	1252.00	1236.00	1350.00	4.92	-1.28	9.22
LESS: Local Dist	86.39	91.48	359.94	363.06	382.49	7.77	0.87	5.35
Camp Fund	1.50	0.00	1.50	1.50	1.50	0.00	0.00	0.00
GFGP INCOME TAX	908.66	914.85	3547.92	3763.87	3922.55	2.54	6.09	4.22
GROSS SALES TAX	788.69	832.95	2746.30	2915.40	3065.36	Run 9 3.01	Run 9 6.16	Run 9 5.14
Auto Sales	130.61	105.42	412.67	471.99	499.97	11.54 10.35	10,06 14.37	4.46 5.93
Other Sales	658.08	727.53	2333.63	2443.41	2565.39	1.82	-4.70	4.99
LESS: Local Dist	118.30	124.94	411.95	437.31	459.80	3.01	6.16	5.14
School Aid	473.22	499.77	1647.78	1749.24	1839.22	3.01	6.16	5.14
Comp Trans	14.24	11.49	45.95	51.45	54.50	14.31	11.96	5.93
Health Init	2.25	2.25	9.00	9.00	9.00	0.00	0.00	0.00
GFGP SALES TAX	180.69	194.50	631.62	668.40	702.84	2.32	5.82	5.15
GROSS CIGARETTE TAX	62.54	59.90	247.88	243.12	238.43	-3.55	-1.92	-1.93
LESS: School Aid	5.00	4.79	19.81	19.45	19.07	-3.38	-1.80	-1.93
Health + Safe	10.01	9.58	39.61	38.90	38.15	-3.62	-1.80	-1.93
GFGP CIGARETTE TAX	47.53	45.52	188.46	184.77	181.21	-3.55	-1.96	-1.93
GROSS SINGLE BUS TAX	474.51	496.24	1723.00	1842.87	1980.09	-1.31	6.96	7.45
LESS: Refunds	23.00	24.00	181.40	88.00	92.00	127.32	-51.49	4.55
Net Single Bus Tax	451.51	472.24	1541.60	1754.87	1888.09	-7.47	13.83	7.59
LESS: Local Dist	45.45	69.02	260.73	269.52	277.67	-4.53	3.37	3.02
GFGP SINGLE BUS TAX	406.05	403.23	1280.87	1485.35	1610.42	-8.05	15.96	8.42
GROSS INTANGIBLES TAX	0.00	0.00	117.50	117.68	123.69	-3.53	0.16	5.11
LESS: Local Dist	0.00	0.00	9.50	9.50	9.50	0.00	0.00	0.00
GFGP INTANGIBLES TAX	0.00	0.00	108.00	108.18	114.19	-3.83	0.17	5.55

8/31/92 : RSQE Forecast

YPADJM 2.85 4.65 5.32

Run 9 YPADJM 2.9 4.2 5.9

Run 9 YDM 4.51 5.45

SIMULATION OUTPUT BY DSET USING DSET AUGMIP.O

NONZERO ADJUSTMENT CONSTANTS

		A.AEQGM	A.AEQONM	A.AEQRTM	A.AEQSM	A.AFDCR	A.AFDCU	A.ECCM	A.EFIREM	A.EGLM	A.EGSM
1992	3	270.	57.	55.	33.	-2.1	0.3	2.1	-0.9	3.4	-2.1
1992	4	270.	34.	55.	40.	1.	-0.3	1.5	-0.803	-5.2	-2.22
1993	1	270.	34.	55.	40.	0.6	-2.	1.	-0.803	-1.7	-1.77
1993	2	270.	34.	55.	40.	-3.	-0.7	0.6	-0.803	-1.7	-1.82
1993	3	270.	34.	55.	40.	-2.1	0.3	0.6	-0.803	-1.7	-1.88
1993	4	270.	34.	55.	40.	1.	-0.3	0.6	-0.903	-1.7	-1.81
1994	1	270.	34.	55.	40.	0.6	-1.	0.6	-0.806	-1.7	-1.71
1994	2	270.	34.	55.	40.	-3.	-0.7	0.6	-0.806	-1.7	-1.71
1994	3	270.	34.	55.	40.	-2.1	0.3	0.6	-0.906	-1.7	-1.71
1994	4	270.	34.	55.	40.	1.	-0.3	0.6	-0.809	-1.7	-1.71

		A.EMDOM	A.EMDVM	A.EMICH	A.EMIM	A.EMNDM	A.ERTRM	A.ESM	A.ETCM	A.EWTRM	A.GAF
1992	3	28.5	23.174	0.	0.4	0.	-1.1	-4.169	1.838	1.413	-0.4
1992	4	29.5	22.39	-20.	0.4	0.	-1.503	-4.537	1.503	1.402	0.
1993	1	29.5	22.106	-24.	0.4	0.	-2.003	-4.567	1.599	1.402	0.3
1993	2	29.4	22.201	-24.	0.4	-0.1	-2.003	-4.566	1.625	1.402	0.
1993	3	29.443	22.159	-24.	0.4	0.012	-2.104	-4.565	1.549	1.215	-0.4
1993	4	29.342	22.176	-24.	0.4	-0.1	-2.006	-4.664	1.628	1.158	0.
1994	1	29.385	22.995	-24.	0.4	0.012	-2.006	-4.531	1.669	1.312	0.3
1994	2	29.384	23.137	-24.	0.4	0.	-2.007	-4.462	1.689	1.311	0.
1994	3	28.184	21.919	-24.	0.4	-0.299	-3.207	-5.091	1.502	1.369	-0.4
1994	4	28.693	22.981	-24.	0.4	0.035	-2.046	-4.308	1.685	1.313	0.

		A.HRSM	A.PCPID	A.PSP	A.RUMICH	A.TBWMNS	A.TCIGMN	A.TINHMN	A.TINTMN	A.TLIQMN	A.TOILMN
1992	3	-1.1	-0.1	0.	0.	0.4	1.2	2.	0.	0.2	0.25
1992	4	-1.	-0.1	-5.	0.1	-0.4	1.1	2.	0.	0.	0.25
1993	1	-0.9	-0.1	0.	0.25	-0.4	1.	2.	0.	-0.2	0.25
1993	2	-0.9	-0.1	0.	0.25	-0.4	-0.9	-0.5	-13.4	0.2	0.25
1993	3	-0.9	-0.1	0.	0.25	-0.4	1.2	-0.5	0.	0.2	0.25
1993	4	-0.9	-0.1	0.	0.25	-0.4	1.1	-0.5	0.	0.	0.25
1994	1	-0.9	-0.1	0.	0.25	-0.4	1.	-0.5	0.	-0.2	0.25
1994	2	-0.9	-0.1	0.	0.25	-0.4	-0.9	-1.25	-13.4	0.2	0.25
1994	3	-0.9	-0.1	0.	0.25	-0.4	1.2	-1.25	0.	0.2	0.25
1994	4	-0.9	-0.1	0.	0.25	-0.4	1.1	-1.25	0.	0.	0.25

		A.TRSNVM	A.TRSVM8	A.TSBQAM	A.TSIM	A.TUPMNS	A.TUSEMN	A.TYAMNS	A.TYQMNS	A.TYWBAS	A.WM
1992	3	-15.	-22.	-28.	4.	-3.5	-8.	-1.9	-30.	150.	0.
1992	4	-20.	-22.	-17.5	4.	-4.4	-9.5	-1.9	-40.	-42.	0.
1993	1	-20.	-22.	-17.5	4.	0.	-5.	-4.5	-44.	-42.	0.
1993	2	-18.	-22.	-26.	4.	0.	-8.	-79.	-23.	-42.	0.
1993	3	-15.	-22.	-26.	4.	-3.5	-8.	-1.9	-30.	-42.	0.
1993	4	-17.	-20.	-26.	4.	-4.4	-9.5	-1.9	-40.	-42.	0.
1994	1	-20.	-20.	-26.	4.	0.	-5.	-4.5	-44.	-42.	0.025
1994	2	-18.	-20.	-26.	4.	0.	-8.	-79.	-23.	-42.	0.
1994	3	-15.	-20.	-26.	4.	-3.5	-8.	-1.9	-30.	-42.	0.
1994	4	-17.	-20.	-26.	4.	-4.4	-9.5	-1.9	-40.	-42.	0.

		A.WSMFM	A.YENTM	A.YOLM	A.YPRM	A.YUCTRM
1992	3	-30.	18.	18.	30.	97.
1992	4	-25.	18.	18.	0.	78.
1993	1	-20.	18.	18.	0.	60.
1993	2	-20.	18.	18.	0.	60.
1993	3	-20.	18.	18.	0.	60.
1993	4	-20.	18.	18.	0.	60.
1994	1	-20.	18.	18.	0.	60.
1994	2	-20.	18.	18.	0.	60.
1994	3	-20.	18.	18.	0.	60.
1994	4	-20.	18.	18.	0.	60.

SIMULATION OUTPUT BY DSET

EXOGENOUS VARIABLES

		ADJRS	AUTOS	AV.POILM	BLDPERM	BONUS	BONUSPC	DAINC	DATE	DATT	DAUCON
1992	2	241.3	8.501	18.18	8.646	0.	0.	0.	1992.2	1.	0.
1992	3	242.6	8.714	19.61	8.9	0.	13.26	0.	1992.3	1.	0.
1992	4	243.9	9.072	19.78	9.8	0.	20.91	0.	1992.4	1.	0.
1993	1	245.2	9.32	19.95	11.2	10.6	25.64	0.	1993.1	1.	0.
1993	2	246.5	9.442	20.13	11.9	0.	32.44	0.	1993.2	1.	0.
1993	3	247.8	9.51	20.3	11.6	0.	43.06	0.	1993.3	1.	0.
1993	4	249.1	9.534	20.48	11.3	0.	67.69	0.	1993.4	1.	0.75
1994	1	250.4	9.586	20.65	11.2	33.8	73.16	0.	1994.1	1.	0.
1994	2	251.7	9.61	20.83	11.2	0.	77.01	0.	1994.2	1.	0.
1994	3	253.	9.616	21.01	11.1	0.	100.27	0.	1994.3	1.	0.
1994	4	254.3	9.607	21.19	10.9	0.	80.27	0.	1994.4	1.	0.

		DAUTO	DCETA	DEATHDUM	DEMDOM83	DGUARD	DPCEMDVM	DSAMPLE	DSEAS1	DSEAS2	DSEAS3
1992	2	1.09	0.	0.444	1.	0.	-25.71	1.	0.	1.	0.
1992	3	1.09	0.	0.	1.	0.	-27.034	1.	0.	0.	1.
1992	4	1.09	0.	0.	1.	0.	-27.236	1.	-1.	-1.	-1.
1993	1	1.09	0.	0.	1.	0.	-27.986	1.	1.	0.	0.
1993	2	1.09	0.	0.	1.	0.	-29.036	1.	0.	1.	0.
1993	3	1.09	0.	0.	1.	0.	-30.636	1.	0.	0.	1.
1993	4	1.09	0.	0.	1.	0.	-34.386	1.	-1.	-1.	-1.
1994	1	1.09	0.	0.	1.	0.	-35.136	1.	1.	0.	0.
1994	2	1.09	0.	0.	1.	0.	-35.886	1.	0.	1.	0.
1994	3	1.09	0.	0.	1.	0.	-39.036	1.	0.	0.	1.
1994	4	1.09	0.	0.	1.	0.	-39.286	1.	-1.	-1.	-1.

		DSTKGL	DSTKGS	DSTKMI	DSTKTCU	DSTKTOT	DSTK371	DTIME	DTINH	DYFP	DYOUTH1
1992	2	0.	0.	0.	0.	0.	0.	146.	0.	0.	0.
1992	3	0.	0.	0.	0.	0.	0.	147.	50.	0.	0.
1992	4	0.	0.	0.	0.	0.	0.	148.	0.	0.	0.
1993	1	0.	0.	0.	0.	0.	0.	149.	0.	0.	0.
1993	2	0.	0.	0.	0.	0.	0.	150.	0.	0.	0.
1993	3	0.	0.	0.	0.	0.	0.	151.	0.	0.	0.
1993	4	0.	0.	0.	0.	0.	0.	152.	0.	0.	0.
1994	1	0.	0.	0.	0.	0.	0.	153.	0.	0.	0.
1994	2	0.	0.	0.	0.	0.	0.	154.	0.	0.	0.
1994	3	0.	0.	0.	0.	0.	0.	155.	0.	0.	0.
1994	4	0.	0.	0.	0.	0.	0.	156.	0.	0.	0.

		DYOUTH2	D1	D2	D3	D4	D6973	D70.73	D7478.1	D75.76	D77.82
1992	2	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
1992	3	0.5	0.	0.	1.	0.	0.	0.	0.	0.	1.
1992	4	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
1993	1	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
1993	2	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
1993	3	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
1993	4	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
1994	1	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
1994	2	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
1994	3	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
1994	4	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.

		D78	D7885.1	D81.3	D82.23	D82.4	D83.1	D85Q2ON	D86ON	D879O	D89ON
1992	2	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1992	3	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1992	4	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1993	1	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1993	2	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1993	3	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1993	4	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1994	1	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1994	2	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1994	3	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.
1994	4	1.	0.	1.	0.	0.	0.	1.	1.	1.	1.

		EGFM	GAID	GAS	GAUTO87	GDP87	GTROF	GTRSL	GTRUCK87	INCO87	IPDIE87
1992	2	57.32	169.9	45.692	115.5	4890.5	563.7	229.6	70.4	138.3	66.2
1992	3	57.57	175.	44.5	117.645	4906.11	570.62	238.28	71.151	137.618	66.299
1992	4	57.64	180.03	44.9	126.355	4943.82	577.62	247.29	73.638	136.447	66.261
1993	1	57.42	185.2	43.8	133.93	4991.66	593.21	256.63	75.602	135.864	66.598
1993	2	57.09	190.52	47.8	137.71	5035.82	600.49	266.34	76.768	136.261	67.173
1993	3	57.16	196.	46.3	139.942	5073.86	607.86	273.99	77.674	137.02	68.092
1994	4	57.23	200.73	46.7	141.339	5106.94	615.32	281.86	78.592	137.748	69.222
1994	1	57.3	205.57	45.5	142.857	5141.3	631.87	289.96	79.501	138.414	70.271
1994	2	57.38	210.52	49.8	144.246	5174.16	639.62	298.3	80.226	139.181	71.175
1994	3	57.45	215.6	48.1	145.228	5205.33	647.47	304.09	80.757	140.075	71.973
1994	4	57.52	220.8	48.6	145.952	5235.6	655.42	310.	81.15	140.976	72.714

		IPDIP87	JCLH	JSSBENLV	JUCBENLV	MICHFRAC	MNOIL87	MPOP	MPOP18	OIL	PC
1992	2	152.5	148.2	587.96	350.	0.331	546.5	9398.	6902.	3.711	123.34
1992	3	155.702	149.228	587.96	350.	0.329	551.327	9406.	6907.	4.	124.355
1992	4	157.053	150.149	587.96	350.	0.328	560.965	9413.	6911.	3.6	125.364
1993	1	159.532	151.082	605.6	350.	0.326	567.249	9420.	6915.	3.8	126.368
1993	2	162.45	151.955	605.6	321.	0.325	572.603	9428.	6921.	3.6	127.398
1993	3	165.246	152.841	605.6	292.	0.324	577.06	9436.	6927.	3.8	128.489
1993	4	167.645	153.778	605.6	293.	0.32	580.488	9443.	6933.	3.5	129.622
1994	1	169.744	154.816	623.77	294.	0.32	583.193	9450.	6939.	3.7	130.775
1994	2	171.774	155.861	623.77	295.	0.318	585.458	-9458.	6946.	3.4	131.946
1994	3	173.784	156.957	623.77	296.	0.316	587.372	9466.	6953.	3.6	133.141
1994	4	175.672	158.101	623.77	297.	0.315	589.076	9473.	6959.	3.4	134.361

		PCDV	PCIG	PCPI	PCPIB	PGAS.C	PLIQUOR	POIL.C	PPNF	RAAA	RCPCD
1992	2	111.4	217.7	139.8	159.7	2.88	147.4	18.75	119.52	8.28	3.89
1992	3	112.458	222.19	140.844	160.88	2.9	148.49	19.7	120.185	7.94	3.32
1992	4	113.389	226.76	141.69	162.08	2.92	149.59	19.87	120.947	7.79	3.404
1993	1	114.249	231.44	142.742	163.28	2.94	150.7	20.04	121.593	7.685	3.575
1993	2	115.142	236.2	143.838	164.49	2.97	151.82	20.21	122.322	7.61	3.766
1993	3	116.047	241.07	145.032	165.71	2.99	152.95	20.39	123.082	7.538	3.861
1993	4	117.058	246.04	146.29	166.94	3.01	154.08	20.56	123.849	7.47	3.91
1994	1	118.104	251.11	147.568	168.38	3.03	155.41	20.74	124.628	7.408	3.936
1994	2	119.158	256.28	148.868	169.84	3.06	156.76	20.92	125.423	7.353	3.95
1994	3	120.227	261.56	150.198	171.3	3.08	158.11	21.1	126.243	7.304	3.959
1994	4	121.314	266.95	151.564	172.78	3.1	159.48	21.28	127.093	7.39	4.462

		RGAS	RIRCO	RIRCV	RIRT	RLFSEC	ROIL	RTRVEH	RTYAM	RTYQM	RTYWM
1992	2	0.05	0.626	1.803	0.443	48.21	0.066	15.16	4.6	4.6	4.6
1992	3	0.05	0.626	1.803	0.443	48.21	0.066	17.	4.6	4.6	4.6
1992	4	0.05	0.626	1.803	0.443	48.21	0.066	17.22	4.6	4.6	4.6
1993	1	0.05	0.626	1.803	0.443	48.21	0.066	17.44	4.6	4.6	4.6
1993	2	0.05	0.626	1.803	0.443	48.21	0.066	17.67	4.6	4.6	4.6
1993	3	0.05	0.626	1.803	0.443	48.21	0.066	17.89	4.6	4.6	4.6
1993	4	0.05	0.626	1.803	0.443	48.21	0.066	18.11	4.6	4.6	4.6
1994	1	0.05	0.626	1.803	0.443	48.21	0.066	18.33	4.6	4.6	4.6
1994	2	0.05	0.626	1.803	0.443	48.21	0.066	18.56	4.6	4.6	4.6
1994	3	0.05	0.626	1.803	0.443	48.21	0.066	18.78	4.6	4.6	4.6
1994	4	0.05	0.626	1.803	0.443	48.21	0.066	19.	4.6	4.6	4.6

		RUG	RUM	STRPFRAC	STRSMNS	TCIGNRT	TCIGRT	TCIGSRT	TCTFR	TEXEMPT	TINPMNS
1992	2	7.5	7.19	0.283	2.25	0.76	25.	0.16	0.452	2100.	0.
1992	3	7.657	7.247	0.245	2.25	0.76	25.	0.16	0.436	2100.	200.
1992	4	7.619	7.219	0.245	2.25	0.76	25.	0.16	0.436	2100.	0.
1993	1	7.478	7.074	0.245	2.25	0.76	25.	0.16	0.436	2100.	0.
1993	2	7.295	6.88	0.245	2.25	0.76	25.	0.16	0.436	2100.	0.
1993	3	7.138	6.715	0.245	2.25	0.76	25.	0.16	0.436	2100.	208.
1993	4	7.026	6.602	0.245	2.25	0.76	25.	0.16	0.436	2100.	0.
1994	1	6.933	6.512	0.245	2.25	0.76	25.	0.16	0.436	2100.	0.
1994	2	6.853	6.436	0.245	2.25	0.76	25.	0.16	0.436	2100.	0.
1994	3	6.785	6.373	0.245	2.25	0.76	25.	0.16	0.436	2100.	216.
1994	4	6.728	6.324	0.245	2.25	0.76	25.	0.16	0.436	2100.	0.

		TINTDLM	TIRCA	TOTHMNS	TP	TPSL	TSBRMNS	TSIP	TSSBASE	TSSRATE	TUPRT
1992	2	9.5	0.	0.	614.9	152.7	22.2	249.4	5.55E+04	0.076	56.81
1992	3	0.	0.	48.	621.121	154.083	22.	252.119	5.55E+04	0.076	56.81
1992	4	0.	1.9	0.	630.373	156.403	22.	254.77	5.55E+04	0.076	56.81
1993	1	0.	0.	0.	650.064	158.898	22.	259.066	5.76E+04	0.076	56.81
1993	2	9.5	0.	0.	660.441	161.427	22.	262.045	5.76E+04	0.076	56.81
1993	3	0.	0.	46.	671.54	164.09	22.	264.926	5.76E+04	0.076	56.81
1993	4	0.	1.95	0.	681.478	166.537	23.	267.767	5.76E+04	0.076	56.81
1994	1	0.	0.	0.	689.339	169.197	23.	271.912	6.00E+04	0.076	56.81
1994	2	9.5	0.	0.	699.831	171.747	23.	274.862	6.00E+04	0.076	56.81
1994	3	0.	0.	46.	710.434	174.318	23.	277.826	6.00E+04	0.076	56.81
1994	4	0.	2.	0.	721.797	177.03	24.	280.828	6.00E+04	0.076	56.81

		TYCFMNS	TYRMNS	WSAGM	WSOM	X87	YAVAFDCR	YAVAFDCU	YAVGAF	YFP	YNFP
1992	2	0.	331.	54.	92.	560.	1321.91	1521.06	1308.14	37.8	359.4
1992	3	1.5	313.	54.75	93.	562.	1320.	1530.	1320.	37.745	365.781
1992	4	0.	295.	55.5	94.	567.916	1410.	1620.	1410.	46.964	372.929
1993	1	0.	298.	56.25	95.	574.795	1410.	1620.	1410.	44.48	382.036
1993	2	0.	331.	57.	96.	582.48	1410.	1620.	1410.	46.248	389.752
1993	3	1.5	312.	57.75	97.	590.813	1410.	1620.	1410.	53.848	396.24
1993	4	0.	321.	58.5	98.	599.631	1410.	1620.	1410.	53.754	403.214
1994	1	0.	325.	59.25	99.	608.896	1410.	1620.	1410.	55.366	410.181
1994	2	0.	363.	60.	100.	618.563	1410.	1620.	1410.	56.177	417.182
1994	3	1.5	341.	60.75	101.	628.598	1410.	1620.	1410.	57.123	424.154
1994	4	0.	334.	61.5	102.	638.967	1410.	1620.	1410.	57.885	430.932

		YOL	YOTRM	YP	YPDIV	YPINT	YPRENT	YPWS	YUNB
1992	2	303.6	4300.	5021.	136.6	673.2	3.	2338.4	41.7
1992	3	307.981	4378.45	5060.93	140.225	664.278	8.	2353.03	42.703
1992	4	312.642	4458.33	5125.58	144.57	662.226	8.	2376.66	42.559
1993	1	317.621	4539.68	5202.27	149.619	667.2	8.	2403.09	41.451
1993	2	322.845	4622.5	5265.79	155.27	674.544	8.	2429.03	32.735
1993	3	328.223	4706.84	5337.09	161.328	681.584	8.	2453.41	29.312
1993	4	333.733	4792.71	5404.57	167.72	687.999	8.	2477.73	28.723
1994	1	339.381	4880.15	5487.12	174.378	694.042	8.	2502.68	28.273
1994	2	345.188	4969.19	5558.82	181.242	700.148	8.	2528.78	27.913
1994	3	351.147	5059.85	5628.82	188.261	706.099	8.	2555.21	27.634
1994	4	357.257	5152.16	5703.65	195.366	716.147	8.	2582.2	27.437

SIMULATION OUTPUT BY DSET

ENDOGENOUS VARIABLES

		AEQGM	AEQMFM	AEQONM	AEQRTM	AEQSM	AFDCR	AFDCU	ECCM	EFIREM	EGLM
1992	2	6762.59	NA	8135.	3395.04	6044.99	199.428	26.072	126.31	188.51	410.69
1992	3	6808.09	9836.98	8205.	3418.18	6104.75	197.573	25.404	126.906	188.521	416.299
1992	4	6878.93	9952.66	8273.36	3441.	6165.14 -.5	198.377 -.8	26.027	127.223	188.642	412.068
1993	1	6932.32	1.01E+04	8343.57	3463.76	6225.67 -.2	200.315 0	27.357	127.927	188.813	413.16
1993	2	6982.34	1.02E+04	8410.54	3485.27	6285.26 -.4	199.017 +.4	26.469	129.148	189.018	414.292
1993	3	7027.24	1.03E+04	8476.84	3505.49	6343.82 -.6	196.988 -.2	25.219	130.527	189.247	415.649
1993	4	7082.61	1.04E+04	8551.76	3527.91	6404.43 -.9	197.503 -1.0	25.03	131.434	189.393	417.146
1994	1	7126.2	1.05E+04	8615.44	3548.08	6462.77 -1.4	198.884 -.8	26.52	132.063	189.671	418.619
1994	2	7170.72	1.06E+04	8682.63	3567.32	6520.41 -1.8	197.202 -1.0	25.432	132.517	189.961	420.031
1994	3	7211.87	1.07E+04	8747.45	3585.74	6577. -2.0	194.999 -1.1	24.15	132.874	190.125	421.417
1994	4	7252.2	1.08E+04	8812.13	3603.62	6632.74 -2.0	195.515 -.9	24.089	133.113	190.366	422.708

8

		EGM	EGSM	EMDOM	EMDVM	EMFM	EMICH	EMIM	EMNDM	EMRESM	EPNMFM
1992	2	630.35	162.35	398.66	269.71	903.36	4182.67	8.95	234.99	312.43	2336.53
1992	3	638.406	164.538	396.082	267.227	898.681	4206.67	8.994	235.372	329.641	2339.94
1992	4	633.245	163.538	398.503	268.634	903.524	4217.19	9.019	236.388	334.489	2345.93
1993	1	635.027	164.447	402.377	270.577	911.185	4236.1	9.042	238.23	335.135	2354.75
1993	2	636.673	165.292	405.292	271.852	916.969	4258.14	9.058	239.826	339.062	2365.44
1993	3	638.909	166.1	406.89	271.768	919.732	4277.27	9.063	241.074	342.894	2375.73
1993	4	641.359	166.983	407.374	268.675	917.87	4290.71	9.053	241.822	346.734	2384.74
1994	1	643.867	167.948	407.821	268.542	918.893	4304.74	9.034	242.531	348.084	2393.9
1994	2	646.287	168.876	408.017	267.65	918.801	4317.63	9.008	243.134	350.083	2402.46
1994	3	648.665	169.798	406.613	263.712	913.638	4325.58	8.974	243.313	355.218	2408.06
1994	4	650.905	170.677	406.059	262.874	912.606	4335.61	8.934	243.673	356.68	2415.42

		ERTRM	ESM	ETCM	EWSM	EWTRM	GAF	HRSM	LFM	NTCIGMNS	NTSBMNS
1992	2	720.61	940.63	156.7	3870.24	194.81	8.063	41.97	4594.	46.1	395.8
1992	3	721.622	942.265	156.772	3877.03	194.86	7.779	42.147	4643.25	49.46	339.774
1992	4	722.996	945.882	156.957	3882.7	195.215 +.1	7.832	42.601	4656.58	47.352	342.265
1993	1	724.771	950.739	157.519	3900.96	195.941 0	8.154	43.039	4671.45	43.267	326.938
1993	2	726.948	956.121	158.201	3919.08	196.946 +.2	8.275	43.24	4684.65	45.69	432.877
1993	3	728.823	961.478	158.838	3934.37	197.757 +.1	7.908	43.342	4698.3	48.464	383.272
1993	4	730.491	966.44	159.468	3943.97	198.465 +.1	7.921	43.386	4711.23	46.431	375.773
1994	1	732.158	971.409	160.229	3956.66	199.334 +.1	8.212	43.405	4723.94	42.453	354.399
1994	2	733.598	976.286	160.96	3967.55	200.128 -.1	8.202	43.396	4736.02	44.795	474.193
1994	3	733.566	980.409	161.373	3970.36	200.741 -.1	7.811	43.355	4745.9	47.531	406.055
1994	4	734.565	985.039	162.023	3978.93	201.383 -.1	7.821	43.294	4756.05	45.523	403.229

376.186

		NTYMNS	PCPID	PSP	RUMICH	STCIGMNS	TBWMNS	TCIGMNS	TCTF	TGFGP	TINHMNS
1992	2	1045.8	135.52	0.	8.95	9.7	13.9	60.7	12.6	NA	41.1
1992	3	829.421	136.467	0.	9.403	10.413	14.861	65.08	12.352	1944.05	28.176
1992	4	833.285	137.232	415.308	9.436	9.969	11.165	62.305	10.311	1651.95	28.293
1993	1	923.815	138.226	0.	9.319	9.109	10.715	56.93	12.761	1614.94	28.399
1993	2	1126.88	139.286	0.	9.104	9.619	12.942	60.118	14.887	2073.95	26.007
1993	3	879.888	140.455	0.	8.961	10.203	14.13	63.768	13.488	2008.49	26.111
1993	4	873.771	141.698	456.802	8.926	9.775	11.252	61.093	11.052	1741.53	26.204
1994	1	960.591	142.958	0.	8.874	8.938	10.8	55.86	13.528	1692.29	26.287
1994	2	1179.53	144.222	0.	8.834	9.431	13.033	58.941	15.681	2190.38	25.599
1994	3	908.663	145.501	0.	8.856	10.007	14.212	62.541	14.236	2085.66	25.643
1994	4	914.846	146.801	485.047	8.84	9.584	11.301	59.898	11.49	1827.37	25.683

		TINTMNS	TLIQMNS	TOILMNS	TRESM	TRSMNS	TRSNVMNS	TRSVMNS	TRSVMN87	TRSVM87	TSBDLNS
1992	2	117.5	5.1	10.1	4150.05	714.3	598.1	116.2	104.309	90.411	87.5
1992	3	0.	5.236	11.401	4205.16	712.603	599.279	113.324	100.77	96.948	38.325
1992	4	0.	6.351	11.071	4266.68	755.934	661.335	94.599	83.429	100.415	68.916
1993	1	0.	4.307	11.23	4432.07	655.141	538.069	117.072	102.471	102.098	72.373
1993	2	117.683	5.092	11.687	4509.73	753.37	616.794	136.576	118.615	102.811	89.099
1993	3	0.	5.24	11.792	4586.64	750.958	627.216	123.742	106.631	102.587	39.134
1993	4	0.	6.369	11.569	4661.86	795.569	694.173	101.396	86.62	104.256	68.966
1994	1	0.	4.327	11.719	4707.23	689.397	565.289	124.108	105.084	104.701	73.181
1994	2	123.693	5.114	12.111	4772.82	791.704	647.844	143.861	120.731	104.645	90.069
1994	3	0.	5.26	12.187	4834.45	788.692	658.084	130.608	108.635	104.514	45.451
1994	4	0.	6.39	12.097	4901.87	832.948	727.533	105.415	86.895	104.586	69.016

		TSBQAMNS	TSIM	TUPMNS	TUSEMNS	TYAMNS	TYDLNS	TYMNS	TYQMNS	TYWM	TYWMNS
1992	2	505.5	2388.	0.	125.6	244.8	115.9	1161.7	159.9	1075.9	1077.
1992	3	400.099	2413.1	74.976	129.195	22.407	73.935	904.856	102.195	1125.95	1093.26
1992	4	433.181	2440.37	73.98	121.762	18.619	83.291	916.576	29.892	1131.62	1163.07
1993	1	421.311	2496.66	-0.	117.494	40.172	82.861	1006.68	112.74	1150.59	1151.76
1993	2	543.976	2529.29	0.	133.391	245.524	116.628	1243.51	160.408	1167.37	1168.57
1993	3	444.406	2559.64	76.218	137.375	22.451	80.283	961.671	102.431	1183.1	1148.79
1993	4	467.739	2589.87	74.916	129.653	18.657	87.108	960.879	30.05	1199.89	1233.17
1994	1	450.58	2643.8	-0.	125.144	42.816	87.669	1048.26	113.801	1215.41	1216.64
1994	2	587.262	2668.48	0.	141.822	264.134	121.319	1300.85	170.868	1227.59	1228.85
1994	3	474.506	2689.35	77.887	145.534	23.936	86.393	996.556	110.815	1238.65	1202.8
1994	4	496.244	2714.19	76.761	137.044	19.925	91.477	1006.32	35.647	1250.09	1284.75

		UMICH	VPROD87	VQLH87	WM	WSGM	WSM	WSMFM	WSPNMF	WUS	YA
1992	2	411.	NA	NA	14.76	4262.8	2.68E+04	8796.3	1.36E+04	11.44	1347.57
1992	3	436.582	188.796	16.763	14.863	4346.32	2.71E+04	8840.31	1.38E+04	11.524	1347.73
1992	4	439.387	199.992	17.475	14.964	4356.05	2.74E+04	8992.46	1.39E+04	11.588	1349.19
1993	1	435.346	209.532	17.993	15.058	4402.2	2.78E+04	9184.58	1.41E+04	11.649	1354.17
1993	2	426.504	214.478	18.246	15.132	4445.46	2.82E+04	9322.51	1.43E+04	11.706	1364.81
1993	3	421.032	217.616	18.475	15.203	4489.76	2.85E+04	9439.41	1.45E+04	11.763	1381.9
1993	4	420.527	219.931	18.867	15.435	4542.49	2.89E+04	9569.28	1.46E+04	11.823	1405.31
1994	1	419.195	222.359	19.077	15.484	4588.32	2.93E+04	9687.61	1.48E+04	11.888	1431.42
1994	2	418.387	224.473	19.326	15.568	4634.34	2.95E+04	9734.87	1.50E+04	11.955	1449.07
1994	3	420.313	225.986	19.766	15.649	4678.08	2.98E+04	9779.23	1.52E+04	12.025	1468.54
1994	4	420.437	227.102	19.955	15.734	4720.49	3.00E+04	9824.32	1.53E+04	12.098	1490.02

921 1351.86

Δ 2.3

		YAFDCR	YAFDCU	YDM	YDM824	YENTM	YENTUS	YGAF	YOLM	YPADJM	YPERM
1992	2	263.625	39.657	4.03E+04	2.97E+04	2859.8	NA	10.548	3219.7	3.98E+04	3.93E+04
1992	3	260.796	38.868	4.06E+04	2.98E+04	2900.82	403.525	10.269	3269.79	4.02E+04	3.98E+04
1992	4	279.712	42.165	4.11E+04	3.00E+04	2965.06	419.893	11.043	3331.43	4.06E+04	4.02E+04
1993	1	282.443	44.319	4.16E+04	3.01E+04	3027.14	426.517	11.497	3400.3	4.12E+04	4.07E+04
1993	2	280.614	42.88	4.22E+04	3.03E+04	3092.18	436.	11.668	3467.78	4.18E+04	4.12E+04
1993	3	277.753	40.854	4.27E+04	3.04E+04	3166.34	450.087	11.15	3532.37	4.24E+04	4.18E+04
1993	4	278.479	40.548	4.33E+04	3.06E+04	3234.28	456.968	11.169	3583.02	4.30E+04	4.23E+04
1994	1	280.426	42.962	4.39E+04	3.07E+04	3300.93	465.547	11.579	3643.55	4.35E+04	4.28E+04
1994	2	278.054	41.2	4.45E+04	3.08E+04	3365.45	473.359	11.565	3703.44	4.40E+04	4.34E+04
1994	3	274.948	39.123	4.49E+04	3.09E+04	3428.7	481.277	11.013	3752.8	4.44E+04	4.39E+04
1994	4	275.676	39.024	4.55E+04	3.10E+04	3490.3	488.817	11.027	3810.28	4.49E+04	4.45E+04

		YPERM824	YPM	YPM824	YPRM	YPRUS	YQ	YSSTRM	YTM824	YTRM	YUCTRM
1992	2	2.93E+04	4.55E+04	3.36E+04	6673.1	NA	9532.9	2929.62	449.895	8076.	532.5
1992	3	2.95E+04	4.60E+04	3.37E+04	6656.87	812.503	9557.69	2973.12	325.316	8210.19	548.691
1992	4	2.96E+04	4.65E+04	3.39E+04	6665.65	814.796	9630.71	3017.26	341.047	8334.68	526.169
1993	1	2.98E+04	4.72E+04	3.42E+04	6730.82	824.819	9757.96	3121.57	317.879	8482.08	482.569
1993	2	3.00E+04	4.79E+04	3.44E+04	6817.36	837.814	9909.53	3167.93	303.871	8568.34	442.759
1993	3	3.01E+04	4.85E+04	3.45E+04	6903.8	850.913	1.01E+04	3214.96	279.828	8665.21	413.653
1993	4	3.03E+04	4.92E+04	3.47E+04	6986.98	863.719	1.02E+04	3262.7	273.18	8786.41	400.813
1994	1	3.04E+04	4.99E+04	3.49E+04	7068.07	876.42	1.04E+04	3375.5	291.617	8988.74	398.128
1994	2	3.06E+04	5.05E+04	3.50E+04	7149.72	889.39	1.05E+04	3425.62	239.508	9125.24	399.616
1994	3	3.07E+04	5.10E+04	3.51E+04	7229.92	902.36	1.07E+04	3476.48	186.695	9264.27	402.854
1994	4	3.08E+04	5.16E+04	3.52E+04	7339.75	919.513	1.08E+04	3528.1	168.609	9411.43	405.45

SIMULATION OUTPUT BY DSET

PERCENT CHANGES AT ANNUAL RATES

		AEQGM	AEQMFM	AEQONM	AEQRTM	AEQSM	AFDCR	AFDCU	ECCM	EFIREM	EGLM
1992	2	6.767	NA	7.16	11.106	1.406	-2.217	-18.094	-2.001	-3.304	0.664
1992	3	2.718	NA	3.487	2.755	4.013	-3.669	-9.861	1.9	0.022	5.575
1992	4	4.227	4.787	3.374	2.697	4.016	1.638	10.184	1.002	0.258	-4.004
1993	1	3.141	5.209	3.438	2.672	3.985	3.963	22.058	2.232	0.361	1.065
1993	2	2.917	3.49	3.249	2.506	3.883	-2.566	-12.37	3.873	0.436	1.099
1993	3	2.597	3.853	3.191	2.341	3.779	-4.016	-17.599	4.34	0.484	1.317
1993	4	3.189	6.477	3.582	2.582	3.877	1.05	-2.964	2.81	0.308	1.448
1994	1	2.485	4.571	3.012	2.307	3.693	2.827	26.026	1.926	0.589	1.42
1994	2	2.522	2.006	3.156	2.186	3.615	-3.341	-15.425	1.382	0.613	1.355
1994	3	2.315	4.157	3.019	2.081	3.516	-4.394	-18.688	1.082	0.345	1.326
1994	4	2.256	2.318	2.99	2.009	3.433	1.063	-1.007	0.721	0.509	1.231

		EGM	EGSM	EMDOM	EMDVM	EMFM	EMICH	EMIM	EMNDM	EMRESM	EPNMFM
1992	2	1.525	6.377	0.03	-2.252	0.689	-1.422	-0.889	5.382	-7.164	-2.205
1992	3	5.211	5.5	-2.562	-3.631	-2.056	2.314	2.001	0.651	23.924	0.584
1992	4	-3.195	-2.409	2.467	2.121	2.173	1.004	1.107	1.737	6.013	1.028
1993	1	1.13	2.241	3.946	2.926	3.435	1.805	1.007	3.154	0.774	1.512
1993	2	1.041	2.072	2.928	1.897	2.563	2.098	0.725	2.707	4.77	1.828
1993	3	1.411	1.968	1.587	-0.123	1.21	1.808	0.193	2.097	4.597	1.751
1993	4	1.543	2.144	0.476	-4.476	-0.807	1.263	-0.431	1.246	4.555	1.526
1994	1	1.573	2.331	0.439	-0.197	0.447	1.314	-0.817	1.178	1.567	1.544
1994	2	1.511	2.228	0.192	-1.321	-0.04	1.203	-1.164	0.998	2.317	1.438
1994	3	1.48	2.203	-1.369	-5.757	-2.229	0.739	-1.498	0.293	5.997	0.936
1994	4	1.388	2.085	-0.543	-1.266	-0.451	0.93	-1.784	0.593	1.656	1.228

		ERTRM	ESM	ETCM	EWSM	EWTRM	GAF	HRSM	LFM	NTCIGMNS	NTSBMNS
1992	2	-3.581	-1.795	0.589	-0.938	-0.348	-2.057	0.669	-1.921	14.147	1388.68
1992	3	0.562	0.697	0.184	0.703	0.102	-13.349	1.694	4.357	32.504	-45.693
1992	4	0.763	1.544	0.471	0.586	0.731	2.739	4.386	1.153	-15.996	2.965
1993	1	0.985	2.07	1.441	1.894	1.496	17.476	4.167	1.283	-30.292	-16.745
1993	2	1.207	2.283	1.743	1.871	2.066	6.075	1.883	1.135	24.351	207.324
1993	3	1.035	2.259	1.619	1.569	1.658	-16.594	0.953	1.17	26.589	-38.543
1993	4	0.919	2.08	1.597	0.979	1.44	0.663	0.403	1.106	-15.753	-7.599
1994	1	0.916	2.072	1.921	1.292	1.762	15.514	0.178	1.083	-30.109	-20.884
1994	2	0.788	2.023	1.838	1.105	1.602	-0.458	-0.083	1.026	23.962	220.516
1994	3	-0.017	1.7	1.028	0.284	1.232	-17.775	-0.38	0.837	26.76	-46.233
1994	4	0.545	1.902	1.622	0.866	1.284	0.505	-0.565	0.858	-15.862	-2.755

		NTYMNS	PCPID	PSP	RUMICH	STCIGMNS	TBWMNS	TCIGMNS	TCTF	TGFGP	TINHMNS
1992	2	160.859	1.04	NA	-5.605	13.39	195.689	15.123	123.941	NA	50.615
1992	3	-60.436	2.823	NA	21.81	32.792	30.661	32.137	-7.634	NA	-77.914
1992	4	1.876	2.262	NA	1.425	-15.996	-68.091	-15.996	-51.443	-47.861	1.684
1993	1	51.065	2.928	-100.	-4.848	-30.292	-15.309	-30.292	134.565	-8.665	1.505
1993	2	121.395	3.103	NA	-8.913	24.351	112.843	24.351	85.218	172.002	-29.675
1993	3	-62.829	3.399	NA	-6.133	26.589	42.105	26.589	-32.613	-12.04	1.611
1993	4	-2.752	3.587	NA	-1.568	-15.753	-59.792	-15.753	-54.916	-43.475	1.435
1994	1	46.071	3.604	-100.	-2.32	-30.109	-15.141	-30.109	124.447	-10.839	1.27
1994	2	127.342	3.581	NA	-1.777	23.962	112.132	23.962	80.537	180.66	-10.065
1994	3	-64.781	3.596	NA	1.008	26.76	41.375	26.76	-32.062	-17.796	0.691
1994	4	2.75	3.621	NA	-0.732	-15.862	-60.019	-15.862	-57.564	-41.07	0.619

		TINTMNS	TLIQMNS	TOILMNS	TRESM	TRSMNS	TRSNVMNS	TRSVMNS	TRSVMN87	TRSVM87	TSBDLNS
1992	2	NA	80.497	-11.049	-3.976	93.671	95.793	83.193	71.574	-1.736	128.093
1992	3	-100.	11.108	62.382	5.418	-0.947	0.79	-9.538	-12.895	32.211	-96.319
1992	4	NA	116.425	-11.1	5.981	26.632	48.31	-51.443	-53.017	15.089	945.495
1993	1	NA	-78.855	5.858	16.431	-43.584	-56.181	134.565	127.579	6.874	21.628
1993	2	NA	95.485	17.307	7.194	74.861	72.666	85.218	79.535	2.823	129.709
1993	3	-100.	12.133	3.655	6.998	-1.275	6.931	-32.613	-34.689	-0.869	-96.279
1993	4	NA	118.263	-7.345	6.722	25.965	50.039	-54.916	-56.455	6.668	864.574
1994	1	NA	-78.704	5.281	3.95	-43.615	-56.025	124.447	116.602	1.72	26.783
1994	2	NA	95.134	14.052	5.69	73.93	72.504	80.537	74.231	-0.214	129.455
1994	3	-100.	11.883	2.538	5.266	-1.513	6.474	-32.062	-34.445	-0.5	-93.515
1994	4	NA	117.854	-2.907	5.696	24.406	49.378	-57.564	-59.065	0.275	431.627

		TSBQAMNS	TSIM	TUPMNS	TUSEMNS	TYAMNS	TYDLNS	TYMNS	TYQMNS	TYWM	TYWMNS
1992	2	191.701	2.777	NA	62.172	1.39E+05	301.049	171.747	300.94	9.152	9.142
1992	3	-60.755	4.271	NA	11.949	-99.993	-83.439	-63.192	-83.315	19.944	6.175
1992	4	37.405	4.597	-5.206	-21.102	-52.326	61.056	5.282	-99.268	2.032	28.094
1993	1	-10.518	9.55	-100.	-13.3	2067.1	-2.047	45.507	2.01E+04	1.108 6.876	-3.83
1993	2	177.912	5.331	-100.	66.127	1.39E+05	292.474	132.827	309.819	1.104 5.963	5.967
1993	3	-55.455	4.886	NA	12.491	-99.993	-77.547	-64.231	-83.373	1.102 5.498	-6.603
1993	4	22.714	4.808	-6.663	-20.657	-52.316	38.594	-0.329	-99.259	1.102 5.799	32.78
1994	1	-13.886	8.593	-100.	-13.204	2673.88	2.602	41.645	2.05E+04	1.100 5.274	-5.255
1994	2	188.561	3.787	-100.	64.945	1.45E+05	266.711	137.153	408.224	1.092 4.068	4.073
1994	3	-57.377	3.165	NA	10.888	-99.993	-74.285	-65.557	-82.309	1.093 3.655	-8.211
1994	4	19.623	3.747	-5.656	-21.37	-51.984	25.702	3.978	-98.929	1.094 3.744	30.165

		UMICH	VPROD87	VQLH87	WM	WSGM	WSM	WSMFM	WSPNMF	WUS	YA
1992	2	-7.421	NA	NA	4.17	8.395	4.549	4.549	3.379	5.421	-1.264
1992	3	27.319	NA	NA	2.824	8.07	4.074	2.016	4.171	2.956	0.048
1992	4	2.594	25.916	18.119	2.746	0.898	4.785	7.064	4.577	2.251	0.435
1993	1	-3.628	20.489	12.38	2.53	4.306	6.207	8.823	5.15	2.122	1.482
1993	2	-7.88	9.781	5.746	1.991	3.989	5.4	6.144	5.367	1.976	3.181
1993	3	-5.034	5.981	5.11	1.893	4.045	4.989	5.11	5.208	1.959	5.103
1993	4	-0.478	4.324	8.774	6.236	4.781 1.102	5.262	5.617	5.186	2.042	6.952
1994	1	-1.261	4.488	4.508	1.275	4.097	4.794	5.039	4.854	2.232	7.64
1994	2	-0.769	3.857	5.336	2.191	4.072	3.713	1.965	4.747	2.27	5.023
1994	3	1.854	2.723	9.414	2.089	3.829	3.343	1.835	4.168	2.357	5.485
1994	4	0.119	1.99	3.885	2.186	3.676 1.094	3.422	1.856	4.352	2.449	5.978

		YAFDCR	YAFDCU	YDM	YDM824	YENTM	YENTUS	YGAF	YOLM	YPADJM	YPERM
1992	2	-9.968	-30.247	5.526	4.44	3.764	NA	-14.709	7.596	3.845	4.785
1992	3	-4.224	-7.722	3.514	0.671	5.862	NA	-10.18	6.369	3.514	4.62
1992	4	32.324	38.488	4.855	2.535	9.156	17.239	33.757	7.756	4.603	4.657
1993	1	3.963	22.058	5.155	2.164	8.641	6.461	17.476	8.529	6.177	5.064
1993	2	-2.565	-12.37	5.368	2.196	8.875	9.194	6.075	8.178	5.834	5.101
1993	3	-4.016	-17.599	5.275	1.814	9.944	13.563	-16.594	7.661	5.582	5.047
1993	4	1.05	-2.964	5.446	1.795	8.863	6.257	0.663	5.859	5.5	5.125
1994	1	2.826	26.026	6.02	2.332	8.501	7.723	15.514	6.93	5.219	5.483
1994	2	-3.341	-15.425	4.717	1.096	8.05	6.882	-0.459	6.739	4.44	5.312
1994	3	-4.394	-18.688	4.42	0.795	7.732	6.861	-17.775	5.438	4.04	5.074
1994	4	1.063	-1.006	4.757	1.096	7.382	6.415	0.505	6.269	4.407	4.967

		YPERM824	YPM	YPM824	YPRM	YPRUS	YQ	YSSTRM	YTM824	YTRM	YUCTRM
1992	2	2.726	4.695	3.618	-0.532	NA	0.733	6.461	267.187	8.415	56.95
1992	3	2.403	4.054	1.197	-0.969	NA	1.044	6.072	-72.661	6.813	12.728
1992	4	2.346	4.888	2.567	0.528	1.133	3.091	6.073	20.79	6.204	-15.435
1993	1	2.507	6.196	3.175	3.968	5.012	5.391	14.562	-24.527	7.264	-29.249
1993	2	2.411	5.553	2.375	5.242	6.452	6.359	6.073	-16.495	4.13	-29.135
1993	3	2.158	5.442	1.975	5.169	6.402	6.642	6.073	-28.087	4.599	-23.814
1993	4	1.901	5.575	1.919	4.907	6.157	6.139	6.072	-9.17	5.713	-11.85
1994	1	2.106	5.804	2.123	4.723	6.013	5.908	14.563	29.855	9.533	-2.652
1994	2	1.799	4.793	1.169	4.701	6.052	5.759	6.073	-54.498	6.214	1.503
1994	3	1.498	4.481	0.854	4.562	5.962	5.569	6.073	-63.081	6.235	3.28
1994	4	1.34	4.821	1.158	6.216	7.823	6.59	6.072	-33.474	6.507	2.603