

The Recession of 2001 and  
Unemployment Insurance Financing

by  
Wayne Vroman\*  
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## Introduction

By the standard macroeconomic yardstick (the change in real Gross Domestic Product or GDP) the economic downturn of 2001 was one of the mildest of the past 50 years. Yet during 2002-2004 several large states have experienced difficulties in financing their unemployment insurance (UI) programs. To date, nine state UI programs have secured loans to pay UI benefits. In addition to borrowing from the U.S. Treasury, the traditional source for loans, UI programs have also borrowed from the private bond market and, in one instance (Pennsylvania), from another agency of state government.

Through the end of 2004 the U.S. labor market continued to exhibit softness with unemployment in December totaling eight million. Despite substantial gains in employment, particularly during the second half of the year, the unemployment rate in 2004 averaged 5.5 percent, and the seasonally adjusted rate did not descend below 5.4 percent in any month. Should the economic recovery stall or suffer a reverse, it is likely that some UI programs would have to borrow during 2005. From the perspectives of the labor market and UI program financing, the recession was more serious than would be inferred from simply following the evolution of real GDP between 2001 and 2004.

This paper examines the recent recession with particular attention to developments in the labor market and UI program financing. It has three objectives. 1) It describes developments in the macro economy and the labor market that have relevance for UI funding issues. 2) It describes the important developments in UI financing associated with the recession of 2001. Because primary responsibility for ensuring UI trust fund adequacy resides with the states, the discussion highlights developments in several states. 3) It discusses the borrowing options available to states whose trust fund reserves are inadequate. The pros and cons of alternative borrowing arrangements are noted. The discussion identifies options but does not recommend a “preferred” method of borrowing. In choosing its financing strategy, a state must consider factors such as constitutional constraints, federal loan requirements, the size of the funding problem, interest rates on alternative debt instruments and the terms and conditions of debt repayment. Finally, the discussion summarizes the experiences of state UI programs that borrowed and repaid loans from the private bond market during earlier recessions.

State UI programs function as a built-in or automatic stabilizer of the macro economy with benefit payouts rising sharply during recessions. The pattern of recession-related benefit payments also reflects developments specific to each individual recession. We start with a review of the 2001 economic downturn and recovery. This provides key background information for understanding recent UI funding experiences.

## I. The Recession of 2001

The economic downturn of 2001 was mild, in fact so mild that its dating was not finally established until more than one year after its trough. In most post-World War II recessions, the quarterly decrease in real GDP was some 1.0 to 3.0 percent for one or two quarters followed by a rebound where real GDP growth often exceeded 4.0 percent for one or two quarters. During earlier episodes, changes in the unemployment rate occurred at nearly the same time as the changes in real GDP. For the eight recessions between 1949 and 1982, the month of highest unemployment occurred within four months of the month deemed to have been the trough by the experts at the National Bureau of Economic Research who officially date U.S. recessions.

The recessions of the early 1990s and of 2001 have differed in important respects from the earlier downturns. The decrease in real GDP has been smaller and the rebound in real GDP has been more modest. Probably most relevant for the present discussion, the time interval between the business cycle trough and the peak in unemployment has lengthened. The official cyclical trough for recession of the early 1990s was March 1991, but the highest unemployment rate occurred in June 1992, 15 months later. The corresponding dates for the 2001 recession were November 2001 for the official cyclical trough and June 2003 for the peak unemployment rate, an interval of 19 months.

During the recovery from the 2001 recession labor productivity growth has been rapid, allowing output increases to be achieved with little increase in employment. The result has been a long period of sticky unemployment rates. After averaging 4.0 percent in 2000, the monthly unemployment rate increased steadily during 2001, reaching 5.7 percent in December. The seasonally adjusted unemployment rate has equaled or exceeded 5.4 percent in every month between November 2001 and December 2004.

Chart 1 summarizes quarterly macroeconomic developments from 2000 through the fourth quarter of 2004. Real GDP and the employment rate (100 minus the unemployment rate) have both been indexed at 100 for the year 2000 and then traced through the recession and recovery. The real output path in 2001 is remarkably flat and then increases at a modest pace during 2002 and the first two quarters of 2003. The acceleration in real GDP growth during the last half of 2003 and continuing into 2004 is apparent in the chart's last six data points.

The employment rate in Chart 1 declined during 2001 and then was remarkably flat in the twelve quarters of 2002-2004. In every month between November 2001 and December 2004 the absolute level of unemployment was eight million or higher. This is vividly illustrated in Chart 2 where the eight million threshold is highlighted.

It should be noted that the peak unemployment rate following the recession of 2001 (6.3 percent in June 2003) was not high by historic standards. During the four preceding recessions the peak unemployment rate exceeded 7.5 percent, and for two, the peak rate was 9.0 percent or higher (May 1975 and November 1982). What is unusual about the 2001 recession is the long duration of the spells experienced by the unemployed. Mean and median durations in 2003 and 2004 were higher than their counterparts from the early 1990s recession and at levels roughly the same as those from the major back-to-back recessions of the early 1980s.

To illustrate the unusually long unemployment durations of the recent recession, annual averages from the monthly labor force survey were examined for all ten post-World War II recessions. Mean duration was noted from 1949 to 2004 and median duration from 1967 (the earliest available year) to 2004. The means for 2003 and 2004 (19.2 and 19.6 weeks respectively) were exceeded only by the mean of 20.0 weeks in 1983. Similarly, the medians for 2003 and 2004 (10.1 and 9.8 weeks respectively) were the highest ever except for the median of 10.1 weeks of 1983. Both sets of 2003-2004 two-year averages are higher than the two-year averages from any previous recession.

Contributing to this high unemployment duration has been a high rate of permanent job separations. Chart 3 displays two series showing persons on temporary layoffs and other job losers as a proportion of total unemployment in annual data from 1967 to 2004. Other job losers are persons who have been terminated by their employers

without a definite recall date, and, since 1994, persons whose temporary job assignments have ended. All have little or no prospect of returning to work with their former employers. In contrast, most on temporary layoff will be recalled within 30 days.

Average unemployment durations for the two groups are sharply different. In 2004, for example, only 6.2 percent of those on temporary layoff experienced unemployment duration of 27 or more weeks compared to 28.0 percent for other job losers. Nearly all of the latter group must find work with a different employer. Securing work with a new employer presents challenges for many, but it was especially difficult during 2002-2004 when employment growth was very low.

The legend in Chart 3 identifies the trough years for the six recessions since 1967, years when reason-for-unemployment data are available. For the first four (1970, 1975, 1980 and 1982), note how the temporary layoff proportion increased in the trough year and the other job loser share increased one and two years following the trough year. During the recessions of 1990 and 2001, the pattern of increase among other job losers closely resembles that of the earlier recessions (with perhaps a larger increase), highest one and two years after the trough year. However, note how little the temporary layoff proportion increased in 1990 and 2001. In these two recessions, employers relied more immediately on permanent separations to make employment adjustments. This increased reliance on permanent separations helps explain the long average unemployment durations of 2003 and 2004.

This recent period of high unemployment has also seen persistently high claims for regular UI program benefits.<sup>1</sup> Chart 2 shows that as unemployment increased during 2001 the number of claimants increased from about 2.2 million and reached 3.0 million by mid-year. The number then remained above 3.0 million through March 2004. For the July 2001-December 2004 period, the monthly average exceeded 3.3 million. Two features of UI claims during 2002-2004 have been the long average duration of claims and the high rate of benefit exhaustions. UI claimants have faced greater difficulties in securing new jobs than in several previous recessions even though average 2002-2004 unemployment rates were low compared to earlier recessions.

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<sup>1</sup> Regular UI pays up to 26 weeks of benefits in all states except Massachusetts and Washington where the limit is 30 weeks and Montana where the limit is 28 weeks. It is the main program for compensating the unemployed and financed by employer payroll contributions.

Experiencing a long period of high claims volume means that states were faced with high UI benefit costs even though real GDP was increasing. This again illustrates that during the recovery from the 2001 recession the labor market and the product market have not behaved identically. In 2002 and 2003 regular UI programs paid about \$40 billion in benefits per year, or twice annual payments in 1999 and 2000. Even in 2004 total payouts totaled about \$35 billion. While the cost rates (benefits as a percent of covered payroll) for the regular UI program during 2002-2004 were not unusually high by historic standards, the long interval of high claims volume has caused major drawdowns in state UI trust funds.

Chart 3 also shows the volume of claimants under the emergency federal benefits program (Temporary Extended Unemployment Compensation or TEUC). Claims were highest during April-June 2002 (more than 1.3 million per month), immediately after the program began in mid-March. The high initial caseload included many who had exhausted regular UI well before the start of TEUC. Following this initial bulge, the numbers averaged nearly 0.9 million or roughly 20 percent of the combined (regular plus TEUC) UI claims load between July 2002 and December 2003. TEUC paid about \$10 billion in both 2002 and 2003. Because TEUC was fully federally financed, it will not enter the following discussion that focuses on state UI financing experiences.

## II. Aggregate UI Trust Fund Balances

The long period of high regular UI claims has substantially reduced state UI trust fund balances. Total net reserves across the 53 programs (the 50 states plus the District of Columbia, Puerto Rico and the Virgin Islands) decreased from \$54.1 billion at the end of 2000 to \$20.0-21.0 billion at the end of both 2003 and 2004.<sup>2</sup>

Chart 4 traces developments in aggregate UI trust fund balances from 1960 to 2004. Since absolute balances do not incorporate growth in the scale of the economy, reserves are more accurately tracked by measuring them relative to annual UI covered wages (termed a reserve ratio). The design of UI financing arrangements anticipates that

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<sup>2</sup> The balances at the end of 2003 and 2004 are net balances that net out about \$3.2 billion in (U.S Treasury and bond market loans) outstanding at the end of both years.

trust funds will be drawn down during recessions and replenished during economic recoveries. Chart 4 identifies five recessionary periods with major trust fund reductions,<sup>3</sup> with the largest changes occurring during 1974-1976 and 1980-1983. Compared to these earlier periods the drawdowns during 1991-1992 and 2001-2003 were more modest.

Using reserve ratios as an indicator of UI trust fund health, note how the ratios fall neatly into broad two time periods. Prior to 1975 all reserve ratios exceeded 2.0 percent, but after 1975 no ratio exceeded 2.0 percent. There has been a long run trend towards smaller balances when reserves are measured relative to an economy-wide aggregate like total covered payroll.<sup>4</sup>

Note the very low reserve ratios during 1975-1976 and then during 1982-1983 when the overall ratio was actually negative. These two periods were characterized by large scale borrowing by the states to pay benefits and by substantial adjustments in UI benefits and taxes to improve program solvency. During 1975-1976 25 state UI programs borrowed while 32 programs borrowed during 1980-1983. Despite present difficulties in many states, the current funding situation is much better than during these earlier periods.

Chart 3 also traces the increases in reserve ratios during four periods of economic expansion: the 1961-1969, 1977-1979, 1983-1989 and 1993-2000. Note the large increases in the reserve ratio between 1984 and 1989. These were years of strong economic growth. Additionally, because more than half the states had required loans from the U.S. Treasury during 1980-1983, there was strong motivation to restore trust fund balances to higher levels. Sustained reserve accumulations were widespread, and the aggregate reserve ratio increased from -0.47 percent at the end of 1983 to about 1.90 percent at the end of 1989 and 1990. This was the largest sustained accumulation of reserves for the four recovery periods spanned by Chart 3.

The rapid pace of trust fund building during 1983-1989 stands in sharp contrast to the experiences of the 1990s. Note that the reserve ratio only increased from 1.25 percent at the end of 1992 and 1993 to about 1.50 percent at the end of the decade. The failure of aggregate reserves to grow more rapidly during these years reflects the cumulative effects

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<sup>3</sup> These are 1970-1972, 1974-1976, 1980-1983, 1991-1992 and 2001-2003 with the recessions of 1980 and 1982 treated as a single extended episode. The reductions in reserve ratios during these five periods were respectively 1.05, 2.00, 1.38, 0.63 and 0.90 percent.

<sup>4</sup> This downtrend has been present since the mid 1940s.



in several states of UI tax reductions and slow growth in taxable wages caused by limits on taxable wages per covered worker. Thus entering the 2001 recession, aggregate trust fund reserves were less adequate than just before the 1990-1991 recession. In fact, the pre-recession reserve ratio in December 2000 of 1.46 percent was lower than in all previous recessions extending back to 1949 with the sole exception of 1979. The \$54.1 billion in the state UI trust funds at the end of 2000 simply was not that large when measured relative to the overall scale of the U.S. economy.<sup>5</sup>

It should be noted that the fund balances underlying Chart 4 include the \$8.0 billion distributed to the states in March 2002 under provisions of the Reed Act. Absent this distribution, reserve ratios at the end of 2002, 2003 and 2004 would have been lower, e.g., 0.31-0.33 percent in 2003 and 2004 rather than 0.53-0.55 percent as shown in Chart 4. This \$8.0 billion infusion prevented larger drawdowns of reserves and helped the financing situation of many states.

The Reed Act distribution of 2002 also gave states increased flexibility in the use of UI trust fund monies. Tax receipts deposited into state UI trust funds can be used for only a single purpose: to pay UI benefits. Reed Act deposits, in contrast, can be used to finance UI administration and/or worker adjustment programs as well as paying benefits. Several states have used their Reed Act monies to support such activities.

### III. Trust Fund Balances in Individual States

The standard measure of trust fund adequacy for a UI program is the reserve ratio (or high cost) multiple. This is a ratio measure that recognizes three factors: the trust fund balance at a point in time, annual covered payroll and the highest cost rate experienced by the state in the past. The numerator of this ratio is the reserve ratio (the trust fund balance as a percent of payroll), exactly analogous to the national reserve ratio series displayed in Chart 4. The denominator is the highest previous twelve month cost rate (benefits as a percent of payroll). Most who study trust fund reserve adequacy recommend that a state achieve a pre-recession reserve ratio multiple of at least 1.0 (or, sometimes, 1.5). Having

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<sup>5</sup> New York state presents a vivid illustration of the change. At the end of 1989 its reserve balance was \$3.2 billion and the reserve ratio was 1.89 percent. The corresponding statistics at the end of 2000 were \$1.2 billion and 0.41 percent. Reserve adequacy in 2000 was less than one-fourth of adequacy in 1989.

a multiple of 1.0 means that the trust fund can support twelve months of payouts at the historically highest payout rate.

In practice, many individual states have fallen short of achieving this solvency standard. At the end of 2000, the national reserve ratio multiple was only 0.66,<sup>6</sup> and just 11 states had multiples that exceeded 1.0. By the end of 2003 and 2004 the national reserve ratio multiple had decreased to 0.24-0.25 or by about 0.41. During the recession, as in past recessions, the UI program has performed a stabilizing function for the macro economy by having much larger benefit payouts than tax collections. The expectation is that the drawdown will be reversed in the ensuing recovery as tax revenues will increase through experience rating, exceed benefit payouts and replenish the state trust funds.<sup>7</sup>

Having a low reserve ratio multiple prior to a recession means that a state will have less time to make solvency adjustments if it wants to avoid exhausting its trust fund. Although a well-established borrowing mechanism exists, states prefer to avoid borrowing if possible. In the past, especially during 1975-1977 and again during 1980-1983, widespread and large-scale borrowing occurred. States with low and negative UI reserves then responded with legislation to both raise UI taxes and reduce benefits. Part of the tax response occurs automatically through experience rating, but the states also made other adjustments to taxes and benefits to improve solvency.<sup>8</sup>

The recession of 2001 affected nearly all states, causing lower employment and increased unemployment. When state unemployment rates for 2000 and 2003 are compared, all states had higher unemployment in 2003 except Hawaii (no change) and Montana (lower by 0.3 percentage points). Across all 53 “state” UI programs, only three experienced increases in their reserve ratio multiples between December 2000 and December 2003 (Hawaii, Maine and North Dakota) while 50 experienced reductions.

Seventeen states entered the 2001 recession with reserve ratio multiples lower than 0.60. Between the end of 2000 and the end of 2003 almost exactly half (eight) of the

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<sup>6</sup> The national reserve ratio at the end of 2000 was 1.46 percent while the national high cost rate was 2.22 percent (costs during the twelve months of calendar year 1975), yielding a reserve ratio multiple of 0.66.

<sup>7</sup> Of course, policies to restrict tax increases during the recovery could offset the replenishment of trust fund balances. Experiences from the 1990s show this is a real possibility.

<sup>8</sup> Automatic adjustments to UI trust fund drawdowns occur as states move to tax schedules with higher rates, individual employers move to higher tax rates due to worse experience (lower reserve ratios or higher benefit ratios) and solvency taxes increase. Additionally, about ten states also have provisions to automatically reduce benefits when trust fund balances are depleted.

17 states experienced above-average reductions in their reserve ratio multiples. Many of the states with low pre-recession reserve ratio multiples have had to borrow to make benefit payments. Thus low initial reserves and above-average reductions in reserves both contributed to the UI funding problems in individual states.

Table 1 provides descriptive detail for fifteen states with low reserve ratio multiples at the end of 2003, all below 0.25. The states are divided into two groups. Nine that have undertaken some form of borrowing during 2002-2004 appear in Panel A while six with low reserves but no borrowing through the end of 2004 appear in Panel B.

Note the large size of the states in Table 1. Column [1] shows each state's size ranking.<sup>9</sup> Panel A has four of the five largest states and eight of the largest 15. Combined, the two panels include 11 of the 15 largest states. In fact, just one of the 15 states in Table 1 (Arkansas) is below-average in size.<sup>10</sup> Using the pre-recession reserve ratio multiple as an indicator of prudent UI trust fund management, the large states, on average, have been less prudent managers than the small states. The simple (unweighted) average reserve ratio multiple for the 13 largest states at the end of 2000 (based on total payroll) was 0.54 (roughly half of the recommended standard) compared to 0.98 for the 13 smallest states.

Columns [2]-[4] focus on losses of reserves during 2001-2003. Reserves are measured on a net basis so that outstanding loans are subtracted from the gross balances held in the state accounts at the U.S. Treasury.<sup>11</sup> For the same three-year period, the national multiple decreased by 0.41. Among the nine states in Panel A, only New York experienced a below-average decrease in its reserve ratio multiple. Note in Panel B that Colorado and Virginia experienced very large losses in reserves during 2001-2003.<sup>12</sup>

Columns [5], [6] and [7] respectively identify when each state first borrowed and its level of indebtedness at the end of 2003 and 2004. The total for six states was \$3.2 billion in both years. Borrowing is seasonal, being especially large during January-March as payouts are high while tax receipts are low. This borrowing (termed cash flow loans) is often followed by repayments that occur after first quarter taxes are received. For

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<sup>9</sup> The size indicator is total payroll of taxable employers in 2002.

<sup>10</sup> With 53 programs, the median size rank is 27. Arkansas ranks 33<sup>rd</sup>.

<sup>11</sup> Reserves for North Carolina at the end of 2000 included \$200 million in the state's reserve fund.

<sup>12</sup> Three states in Table 1 (North Carolina, Colorado and Virginia) were among the top four in the decrease in their reserve ratio multiple as shown in column [4]. Only the Virgin Islands had a larger decrease.

example, total state UI indebtedness to the U.S. Treasury (from all borrowing) at the end of March 2004 was \$5.6 billion but only \$3.6 billion at the end of June 2004.

California, Massachusetts and Pennsylvania first borrowed in 2004.

Pennsylvania's borrowing was from another state fund (the Motor License Fund). This was effectively a cash flow loan to cover a potential revenue shortfall in the months just prior to the large seasonal revenue inflow of April-May. A loan of \$300 million was secured in March and fully repaid in May. Borrowing by California (\$238 million) and Massachusetts (\$418 million) was also fully repaid by the end of May 2004. One or more of these three states may have to borrow again during the early months of 2005.

Most states faced with declining trust fund reserves would follow one of two courses of action. A state can try to ride-it-out, hoping that the economic recovery will improve revenues and reduce benefit outlays sufficiently for the trust fund to bottom out before reaching zero. The main element of a ride-it-out approach is to rely on an automatic response of UI taxes through experience rating (and, in some states, automatic benefit reductions). Experience rating causes UI taxes to increase automatically when trust fund balances fall below designated thresholds. Column [8] identifies states with experience rating responses to the trust fund drawdowns caused by the 2001 recession.<sup>13</sup>

A second possible response is to "do something" legislatively. Usually this legislation features a combination of tax increases and benefit reductions. Column [9] of Panel A shows that five states that have borrowed enacted solvency legislation in 2003 or 2004. Important details of these legislative responses are given in Part IV. Arkansas and Virginia also enacted legislation that included solvency provisions.

One possible element of a legislative response is to authorize and then to issue state debt instruments. This represents an alternative to using loans from the U.S. Treasury. To date, four states have authorized this form of borrowing, and Illinois, North Carolina and Texas have issued state debt instruments. A principal argument for this financing strategy is that it costs less due to the low interest rates on state-issued debt. Compared to borrowing from the Treasury under provisions specified by Title XII of the

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<sup>13</sup> Two kinds of ride-it-out responses can be identified. The first is a traditional experience rating response where the automatic response of UI taxes restores the trust fund. To follow this, a state must have a large pre-recession reserve, hence emphasis in the earlier discussion on the reserve ratio multiple of 1.0. The

Social Security Act, state debt instruments may carry interest rates some 200-300 basis points (or more) below the interest rates on Title XII loans.

Part V discusses borrowing alternatives. It covers state bond issuances of earlier recessions as well as the issuances of 2003 and 2004. The requirements on states and other details of Title XII loans are included in the discussion.

#### IV. State Solvency Legislation of 2003-2004

States have responded to their trust fund drawdowns in different ways. Column [9] of Table 1 identifies the states with low reserves where legislation was passed in 2003 or 2004 to improve solvency.<sup>14</sup> Five with solvency legislation are states with some type of borrowing during 2002-2004.

Table 2 focuses on the details of the solvency adjustments made by seven states where borrowing occurred between December 2002 and the end of 2004. Five states enacted some type solvency package while North Carolina implemented an administrative response. Pennsylvania is also included in Table 2 because it has automatic provisions that respond to trust fund drawdowns.<sup>15</sup>

Table 2 identifies detailed aspects of benefit reductions, tax increases and borrowing activities for the seven states. Four states (Illinois, Massachusetts, Minnesota and Missouri) have included in their solvency packages several traditional provisions of benefit reductions and tax increases. The other three states have followed more unusual approaches to achieve improved solvency. The discussion will start with Illinois and Pennsylvania.

In the late 1980s, Illinois and Pennsylvania modified their UI statutes to implement a funding strategy that has been described as flexible financing. Unlike the traditional advance funding strategy which relies on having a large fund balance prior to a recession, flexible financing deliberately aims to have a small fund balance, but then to

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second is a flexible financing response, which causes taxes to increase and/or benefits to be reduced as the fund balance decreases. In the past, Illinois and Pennsylvania have both advocated flexible financing.

<sup>14</sup> Additionally, North Carolina has undertaken administrative actions to compensate for inadequate reserves.

<sup>15</sup> The two states with borrowing but no response to date (New York and California) are not included in Table 2 because there is no (legislative or other) action to describe.

activate automatic tax increases and benefit reductions to counteract a recession-related trust fund drawdown.

One can question the rationale for flexible financing. Household income and business profits both decline during recessions. To impose added economic burdens on the parties during a recession, i.e., reduced benefits and higher taxes, seems inappropriate to many. In addition to this objection, there is a second important question: does flexible financing actually work? During the recession of 1990-1992, Illinois and Pennsylvania did not experience important financing problems as neither state was among the seven that secures loans to pay UI benefits.<sup>16</sup> However, both states have experienced financing problems following the 2001 recession, hence their inclusion in Table 2.

The flexible financing provisions adopted by Illinois in the late 1980s included modifications of its tax setting mechanism and provisions to freeze or reduce the maximum weekly benefit in response to a trust fund drawdown. Different triggers were established to activate individual solvency features. These included specific trust fund threshold amounts to trigger individual tax features along with the use of changes in tax rates and first payment volume as well as a trust fund threshold to activate solvency-related benefit reductions. Other features of this legislation included a redefinition (reduction) in the weekly wage used to calculate maximum weekly benefit and establishing a floor for the state experience factor used to set the rate for the solvency tax. In reality, the latter two features were not flexibility features since they operated in all years after 1988. Nevertheless, this package was described as flexible financing by the then-director of the Illinois UI program<sup>17</sup> and helped to justify a policy of maintaining a modest UI trust fund balance.

Pennsylvania's UI law includes four flexible financing features. All four operate automatically as the level of a single solvency trigger (UI reserves on June 30<sup>th</sup> as a percent annualized benefit payments for the preceding 36 months) changes over seven designated ranges. The four features are: 1) a solvency surcharge on employers that can

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<sup>16</sup> The seven states were Connecticut, the District of Columbia, Maine, Massachusetts, Michigan, Missouri, and New York. Of these, only Connecticut and Massachusetts had loans during 1990-1994 that totaled more than one percent of (1991) payroll.

<sup>17</sup> One description of the Illinois legislation is found in a statement by Sally Ward, the head of the UI agency in 1987. See U.S. House of Representatives, Committee on Ways and Means, "Reform of the Unemployment Compensation Program, Series 100-46, (Washington, D.C.: USGPO, December 1987).

range from a minimum of -2.5 percent (a tax reduction) to a maximum increase of 7.2 percent of the basic UI tax liability; 2) a flat rate (additional) surcharge on employers of up to 0.6 percent of taxable wages, 3) an employee tax of up to 0.09 percent of total covered wages, and 4) a weekly benefit reduction of 2.3 percent.

The solvency features were active during 2003 and 2004, and are slated to be in effect (at least) through 2005 and 2006. During 2003, a solvency surcharge of 3.6 percent was in effect along with an employee tax of 0.02 percent. In 2004, the surcharge was 7.2 percent, the flat tax was 0.4 percent and the employee tax was 0.09 percent. During 2005 and 2006 all four features are projected to be operative at their respective maxima. Thus Pennsylvania's flexible financing strategy is being seriously tested. It will be of interest to note whether or not the four features will act with enough combined strength to restore the fund balance without the need for additional borrowing or the need for new solvency legislation. The entries in Table 2 for Pennsylvania refer to the activation of its automatic features during 2003-2006.

Pennsylvania's borrowing from the Motor License Fund had two motivations. First, and most obvious, it wanted to ensure that its trust fund balance was adequate to make benefit payments during March-May without borrowing from the U.S. Treasury. Second, it wanted to ensure that some of its Reed Act monies (included in the state's UI trust fund balance) would remain available for future uses other than paying benefits.<sup>18</sup>

Unlike Pennsylvania, the other six states in Table 2 (including Illinois) have all implemented some form of active initiative to address their UI funding problem. Five enacted new legislation while North Carolina responded administratively. The North Carolina Council of State, a select committee of elected department heads such as the State Treasurer and headed by the Governor, authorized the issuance of tax anticipation notes secured by the future UI tax revenues. North Carolina issued \$172 million of tax anticipation notes in 2003 and fully repaid the notes with UI tax receipts from January-May 2004. During 2004, it again borrowed from the U.S. Treasury, repaid the January-September Title XII loans at the end of September, and issued new tax anticipation notes

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<sup>18</sup> Should an unexpected drawdown have occurred during March-May that caused the fund balance to go to zero, all monies in the trust fund would have had to be used to pay benefits.

totaling \$269 million during the September-December 2004 period. These issuances will be repaid with UI tax receipts from the initial months of 2005.

Two aspects of North Carolina's strategy are noteworthy. First, it is carefully adhering to the requirements for interest-free borrowing under Title XII. Loans from the Treasury are repaid before September 30<sup>th</sup> and no new borrowing from the Treasury takes place between October 1<sup>st</sup> and December 31<sup>st</sup>. Second, it is operating exclusively with short term notes for its the interest bearing loans. Given the upward slope of the term structure of interest rates (the association between interest rates and the maturity date of debt instruments), this ensures that it will borrow at very low short term rates, e g., about 1.1 percent for the notes issued in 2003 and 1.8 percent for those issued in 2004.

Texas is the third state to follow a nonstandard approach to its UI financing problem. It entered the 2001 recession with one of the lowest reserve ratio multiples of all states (0.24 as shown in column [2] of Table 1), and it started to borrow in December 2002. By September 2003 its indebtedness totaled about \$280 million. Late in the month, Texas authorized \$2.0 billion in state bonds and issued a total of \$1.4 billion in state debt instruments. These were issued as four separate series, differing in their tax status and call features. The bonds have maturity dates between July 2004 and January 2009, but over half are callable so that they can be retired before maturity.

Part of the bond proceeds was used to repay all outstanding Title XII advances and the rest was deposited into the Texas UI trust fund. These actions allowed the state to avoid two things: interest charges on its Title XII loans (roughly \$17 million) and a large UI tax surcharge that would have been due on January 1, 2004. The surcharge (deficit tax) would have totaled about \$750 million and would have been levied on top of other UI taxes for 2004. The bond issuance allowed employers to pay much lower taxes in 2004 compared to their obligations under the earlier Texas tax statute.

Thus while UI taxes paid in 2004 are higher than in 2003, they are much lower than would have been the case absent the bond issuance. By issuing bonds, tax obligations have been smoothed and repayment will be spread over five years. Texas also has borrowed at a lower interest rate than the rate charged on Title XII advances. State officials estimate that over \$300 million in interest has been saved as a result. Additional details of the Texas bond issuance are discussed in section V.



The other four states included in Table 2 enacted solvency legislation that included several traditional adjustments, i.e. tax increases and benefit reductions. In all four states, tax increases accounted for most of the solvency adjustments.<sup>19</sup> All four states increased one or more aspect of solvency taxes triggered by low trust fund balances. Three of the four also increased their taxable wage base. Note in Illinois and Missouri that benefit liberalizations as well as benefit reductions were part of the legislation.

Of the states with solvency tax increases, the changes in Massachusetts were especially noteworthy. In setting taxes for the upcoming year, Massachusetts examines the statewide reserve balance on August 31<sup>st</sup> and sets its solvency tax (assessed as a reduction in the employer's trust fund account on the computation date) as a percent of taxable wages. Legislation of December 2003 empowered the Department of Employment and Training (DET) to levy a solvency assessment that would cover not only traditional costs such as noncharged benefits but also ensure that the state repays all outstanding Title XII loans secured before September 30<sup>th</sup> and collects enough additional revenue so that the state would not borrow between October 1<sup>st</sup> and December 31<sup>st</sup>. In effect, this new authority ensures that Massachusetts will avoid interest charges on Title XII loans but adds uncertainty among employers liable for the solvency assessment in September. The new solvency provisions had their first test in 2004 but reserves were deemed sufficient to avoid an extra assessment to avoid Title XII interest charges.

The solvency legislation in two of the four states (Illinois and Missouri) included authorizations to issue state notes/bonds. Illinois authorized \$1.4 billion and issued bonds totaling \$712 million on July 1, 2004. Missouri authorized \$450 million in three year notes, did not act in 2004, but has been examining options and could issue notes in 2005. More details of state issuances are presented in section V.

As noted in Table 2, solvency legislation in three states (Illinois, Massachusetts and Missouri) increased the UI taxable wage base. Massachusetts raised its base from \$10,800 per employee in 2003 to \$14,000 in 2004 where it is slated to remain for ensuing years. Illinois and Missouri raised their tax bases in annual steps after 2004, reaching

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<sup>19</sup> In Pennsylvania the percentage breakdown was roughly 58 percent for employer tax increases, 33 percent for employee taxes and 9 percent for benefit reductions over the four years 2003 to 2006. In Illinois the percentage breakdowns were 92 percent for employer tax increases and 8 percent for benefit reductions. In Massachusetts nearly 100 percent of the changes were tax increases.

\$12,300 and \$12,500 respectively in 2009 and possibly \$13,000 for both in 2010. Minnesota, which already has an indexed taxable wage base, did not alter its tax base.

Chart 5 traces the taxable wage proportions for these four states from 1965 to 2010. The proportions through 2003 are historic data while the estimates for 2004-2010 are based on regressions. The peaks in the sawtooth patterns identify years of major increases in the taxable wage base including the federally mandated increases in 1972, 1978 and 1983.

Three aspects of Chart 5 are noteworthy. 1. The proportions for the earliest years are substantially higher than for the latest years. 2. The pattern for Minnesota departs substantially from the other three patterns. The state adopted indexation in 1982, and since then the taxable wage proportion has varied within a narrow range between 0.47 and 0.50 while it has declined in the other three states. 3. Most important, note the generally small effects of the tax base increases after 2004. In Massachusetts, the taxable wage proportion changed much more between 1991 and 1992 (increasing from 0.31 to 0.40) following the tax base increase of 1992 than between 2003 and 2004 (from 0.28 to an estimated 0.33). The increases in Illinois after 2004 roughly match wage growth (assumed to be three percent per year) so that the higher tax base from the new legislation does not substantially increase the taxable wage proportion. In all three states, the taxable wage proportion in 2010 is substantially lower than during the mid-1990s despite recent legislation to raise the tax base.

## V. State Borrowing Options

States with inadequate UI reserves and needing loans to pay benefits have two broad borrowing options: from the U.S. Treasury or from the private capital market. Over the history of UI, the majority of states have utilized advances from the U. S. Treasury under loan provisions specified in Title XII or the Social Security Act. During 1974-1979 25 separate programs borrowed from the Treasury with loans totaling \$5.54 billion. Between 1980 and 1987 32 different programs (including Puerto Rico and the Virgin Islands) borrowed a total of \$24.0 billion. More recently, seven states needed loans in the recession of the early 1990s and eight borrowed from the Treasury between December

2002 and December 2004. Roughly three quarters of the programs have borrowed from the Treasury at some point in the past. The terms of these loans are well understood and are briefly summarized below.<sup>20</sup> In contrast, only six states have ever borrowed in the private capital market to finance trust fund deficits.

#### Borrowing from the U.S. Treasury

Short term (cash flow) borrowing from the Treasury does not carry interest charges when certain provisions are met. The most important of these are: 1) the full repayment by the end of September of all loans secured between January and September and 2) no new borrowing during October-December. As noted above, these loans help to maintain benefit payments in the early months of the year when monthly outlays are highest but revenues are lowest.

Loans that last longer carry interest charges levied at an interest rate equal to the rate earned on positive fund balances, i.e., the rate on longer term Treasury debt. In 2003-2004 this rate was close to 6.0 percent. Interest is charged on the average daily balance of debt. States with funding problems manage their debts with the objective of ending each day with a UI trust fund balance of zero. Thus, either borrowing or debt repayment occurs each day, a strategy that minimizes the average daily balance.

Repayment of the principal on Treasury loans may come from the trust fund or external sources. Repayment of interest, in contrast, must come from an external source. States are obliged to use their trust funds only to pay benefits except for unusual circumstances such as trust fund monies received from special Reed Act distributions. The principal can be repaid from the trust fund balance because the original debt was incurred to pay benefits.

Title XII also has provisions to ensure automatic repayment of outstanding debts. When the principal on a loan has been outstanding on January 1 of two consecutive years and remains unpaid as of November 1 of the second year, an automatic flat rate assessment on (federal) taxable wages is levied starting in January of the following year and continues until the debt is fully repaid. The penalty rate starts at 0.3 percent but then

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<sup>20</sup> Two summaries of this method of borrowing are given in Chapter 1 of Wayne Vroman, Unemployment Insurance Trust Fund Adequacy in the 1990s, (Kalamazoo, MI: W.E. Upjohn Institute, 1990) and a recent paper by Rick McHugh, "Bond Financing for Insolvent State Unemployment Insurance Trust Funds," National Employment Law Project, (January 2004), pp. 7-8.

increases by increments of 0.3 percent or more during subsequent years.<sup>21</sup> Debts are repaid starting with the oldest. New York employers will pay this penalty tax in 2005.

When debt repayment takes place through increased federal taxes (reduced credit offsets) the taxes are paid at a single rate by all employers regardless of experience. The desire to avoid such flat rate assessments was an important consideration in using bond financing in Illinois in 2004. The majority of its debt repayments will be from experience-rated taxes, e.g., solvency taxes paid into the UI trust fund and only a minority from flat rate assessments to repay fixed term bonds issued in July 2004.<sup>22</sup>

A final aspect of borrowing from the Treasury relevant today pertains to the disposition of monies received by the states under the Reed Act, most recently the \$8.0 billion disbursement of March 2002. As noted earlier, states can use these monies to finance UI-ES administration and worker adjustment activities as well as for paying benefits. However, any Reed Act monies not specifically obligated for one of these “alternative” uses must be fully used up in paying benefits before a state may receive a Title XII loan. Pennsylvania’s borrowing from the Motor License Fund was undertaken to preserve some of its Reed Act monies for alternative uses.

#### Borrowing in the Capital Market

Starting with Louisiana and West Virginia in 1987, six states have secured loans from the private capitol market to cover UI funding deficits. Table 3 gives some details of these loans. The first three states to utilize these loans have completed their repayments while the three that borrowed recently have only started their repayments. In addition to the six states, Table 3 also includes Missouri which has authorized this type of borrowing but had not yet issued debt instruments as of the end of December 2004.

Several uncertainties surround this form of borrowing and this is reflected in provisions of the debt issuances. Should the state economy perform worse than expected during the repayment period, there could be a need for additional borrowing. Note in columns [2] and [3] that Louisiana and West Virginia borrowed their full authorizations while Connecticut, Texas and Illinois issued less than their full legislative authorizations.

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<sup>21</sup> Technically this tax increase is a reduction of the credit states are allowed to take on their federal UI taxes when their experience rating system (method for assigning contribution rates to individual employers) is deemed acceptable by the federal partner and other federal requirements are also satisfied.

The latter arrangement allows for additional borrowing without the need for new legislation. Connecticut found it did not need additional loans, but Texas and Illinois at present retain the authority to borrow some \$600-700 million more should the need arise.

Column [4] shows a clear pattern as to the size of the loans, much smaller in the present decade than in the 1980s and 1990s. Even if Missouri borrows its full authorization, the amount will only represent about 0.6 percent of covered wages. For Louisiana in particular it seems that the loan of 1987 was unnecessarily large. Its borrowing was fully repaid in seven years not the fifteen years potentially contemplated at issuance. Similarly, West Virginia fully repaid its loans in four years not the six years originally authorized.

Because of uncertainty about future macroeconomic performance and future interest rates, the bonds were issued with hedging features. As noted in column [8] of Table 3, all five bond issuances have had early redemption (call) provisions. Interest rate uncertainty is addressed by having variable rate bonds (Connecticut, Texas and Illinois) and potential future convertibility of variable rate bonds to fixed rate bonds (Connecticut, Texas and Illinois). Connecticut both called and converted some its bonds before repayment was completed in 2001.

North Carolina's approach to uncertainty stands in sharp contrast to the states that have issued bonds. Rather than issue debt instruments with long maturities, it (in 2003 and 2004 at least) has borrowed using both Title XII cash flow loans and short maturity notes and doing both on an "as needed" basis. This has two advantages: 1) low interest rates associated with the short-term notes and 2) no "over-issuance" of state-supported debt instruments. A similar strategy was considered by Massachusetts in the early 1990s but not implemented because its debt was successfully addressed by solvency legislation.

The Texas issuance of 2003 also involved considerations of the tax treatment of the bonds. Previous offerings by other states had utilized tax-free municipal bonds. However, Texas issued both tax-free and taxable bonds, respectively \$280 million and \$1,120 million. The state's strategy in having this mixture was influenced by the solvency tax feature of its UI law. Texas law requires the imposition of a solvency tax

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<sup>22</sup> This statement reflects anticipated repayment patterns in Illinois where callable bonds will be repaid several years before present maturity dates as solvency (and other) tax receipts replenish the UI trust fund.

whenever its trust fund balance falls below one percent of taxable payrolls on the computation date, October 1<sup>st</sup>. Any shortfall below this threshold is to be made up by solvency tax revenues in the upcoming year. Absent bond financing, the solvency taxes due in 2004 would have totaled about \$1.0 billion. The tax-free component of the bond issuance was used to pay-off the outstanding UI trust fund debt at the end of September 2003. An additional \$1,120 million from taxable bonds was deposited into the trust fund, satisfying the one percent minimum balance requirement.

To avoid losing interest income on its trust fund balance, Texas deposited the proceeds from taxable bonds into the trust fund. Thus the state avoided imposing a large solvency tax. Because of the structure of bond market interest rates, Texas also realized a monetary gain from its financing package. Positive UI trust fund balances yielded about 6.0 percent per year in 2003 and 2004 while the interest rate on the state's taxable bonds averaged less than 4.0 percent.<sup>23</sup>

For other states, the debt instruments have been exclusively tax-free bonds (notes in North Carolina). The proceeds have been used mainly to repay existing Title XII advances. However, small amounts have been reserved for administrative costs and to repay possible future Title XII advances.

The typical time to issue state bonds has been July-September. Bond proceeds can be deposited into the trust fund prior to September 30<sup>th</sup> to satisfy Title XII cash flow borrowing requirements. Also, since second quarter tax receipts arrive during July-August, the bond issuance can be made in light of up-to-date information about the trust fund balance.

Some states have considered issuing bonds, but then concluded there were constitutional impediments. In Minnesota, for example, the state discussed the possibility of issuing bonds. However, Minnesota's constitution is restrictive as to the activities that can be financed with general obligation bonds. The proceeds must be used to make improvements in public infrastructure or programs. Allowable activities are identified,

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<sup>23</sup> Placing tax-free bonds into the trust fund would have meant the associated interest income was subject to the Treasury Department's interest arbitrage rules. Essentially the interest rate spread between UI trust fund balances and the tax-free bonds would have to be repaid to the Treasury. Since \$600 million of the Texas bonds carry variable interest rates, the net interest income on the UI trust fund balance to be realized in later years is uncertain, dependent on future variation in the relevant interest rates.

e.g., building classrooms for schools, upgrading parks, but financing UI trust fund deficits is not an allowable activity. The state can also borrow short term, but short-term loans must be fully repaid before the end of the same biennium. In the fall of 2003, this implied full repayment by the end of June 2005. Since UI taxes were already slated to increase during 2004 and 2005 (through experience rating), adding to employer taxes in these two years (to repay state-issued notes) had little appeal. In sum, issuing bonds was not allowed and issuing notes was not an attractive option.

States issuing bonds establish an administrative apparatus to collect the taxes needed to repay principal and interest on the bonds and to cover associated administrative expenses. If the administrative entity judges it appropriate, “excess” revenues are used to repay parts of the callable bonds. This administrative entity also transfers monies into the UI trust fund to prevent the accrual of new interest-bearing Title XII advances.

## VI. Borrowing Costs

Except for Title XII cash flow loans, all forms of borrowing entail costs. For a state trying to minimize UI borrowing costs, the basic contrast between Title XII advances and other forms of borrowing is straightforward. Because borrowing and repaying under Title XII can be executed on a daily basis, a state can minimize the average daily balance of its outstanding loans through appropriate debt management. It simply retires debt on days when revenues exceed benefit payments and borrows on days when payments exceed revenues. Thus the cost of borrowing under Title XII is the product of this minimum average daily balance times the Title XII interest rate. Interest costs accrue as long as there is outstanding debt, but there are no other borrowing costs.

The Title XII interest rate is set annually by the U.S. Treasury and is capped at 10.0 percent. In the six years between 1982 and 1987 the rate consistently exceeded 9.0 percent, equaling 10.0 percent in three of these years. Column [1] of Table 4 displays Title XII interest rates from 1991 to 2004. The highest rate during these recent 14 years was the 8.60 percent of 1991. Rates have been below 7.0 percent since 1994 and below 6.0 percent during 2003 and 2004. With the low inflation of recent years, this and other interest rates have been trending downward.

Borrowing in the private bond market involves several considerations. Two are: the type of debt to issue and the size of the issuance. Compared to Title XII loans, this form of borrowing will almost certainly carry a lower interest rate, but the amount of borrowing will exceed the average daily balance of Title XII loans. Also, other costs besides interest rate costs need to be considered.

Columns [2] and [3] of Table 4 respectively display interest rates for taxable corporate bonds and tax-free municipal bonds (the type of instruments issued by most state UI programs that have borrowed in the private bond market). Interest rates are lower for the latter because the interest paid to owners of such bonds is not taxable under federal and state income taxes. The lower interest rates on municipal bonds is emphasized in columns [8] and [9] which respectively show spreads between municipals, on the one hand, and Title XII loans and corporate bonds respectively.

Two other points should also be noted. 1) The interest rates in columns [2] and [3] are average yields, averaged across bonds of differing maturities. Newly issued bonds can carry interest rates that depart substantially from these averages. State UI programs issuing municipal bonds in 2003-2004 have paid interest rates in the 2.0-4.0 percent range. The large contrasts with Title XII interest rates make this form of borrowing attractive for a debtor state. 2) The interest rate spreads in columns [8] and [9] exhibit considerable year-to-year variability. In both columns, the widest spread is more than twice the size of the smallest spread. The municipal bond differential with Title XII, column [8], has not been constant.

Columns [4]-[7] of Table 4 display interest rates for debt instruments of successively shorter maturities. In general, rates decrease at shorter maturities and municipals carry lower rates than other instruments. Interest rates at the short end of the market have been very low since the onset of the recession in 2001 with basis point spreads vis-à-vis Title XII loans, corporate bonds and municipal bonds typically exceeding 300 basis points (columns [10] and [11]).

One purpose in showing several interest rate series in Table 4 is to suggest something of the range of debt instruments that might be considered by a state in borrowing from the private bond market. As indicated above, North Carolina issued notes



in 2003 and 2004. During 2002-2004, interest rates on one-year and shorter obligations (columns [5], [6] and [7]) have consistently fallen below 2.0 percent.

Besides interest costs, at least three other costs of issuing private debt instruments should also be noted. 1) Underwriting fees are charged by the companies that issue bonds. These fees are assessed at the time of the issuance. 2) Insurance and other issuance costs must be recognized. Bonds need to be insured against default risk and other incidental costs also arise. 3) Exercising the call features of municipal bonds involves a fee in that the principal must be redeemed at a price above the face value of the bond. Some examples of these costs based on past bond issuances are instructive.

Reviewing the bond sales made by Louisiana, Connecticut, and Illinois, underwriting discounts (fees) ranged from 0.22 to 0.34 percent of the loan amounts while insurance and other issuance costs ranged from 0.23 to 0.56 percent of the loan amounts. For these three states, the total of all issuance costs ranged from 0.48 to 0.89 percent of the loans. Although analogous detailed information for Texas has not been found, the sum of all issuance costs was about 0.33 percent. Expressed as an annual percentage interest rate prorated over the lives of the associated borrowing, the sum of these costs would represent less than 0.2 percent.

Early redemption premiums for callable bonds were generally between one and three percent for Louisiana, Connecticut and Illinois. Calls exercised three years after issuance would amount to an annualized percentage of less than one percent in nearly all instances and less than 0.5 percent for a call exercised after six years.

The sum of all of the “additional” cost components delineated above can be combined and expressed as a number of basis points to be added to the interest rate costs of debt issuance in the private market. The preceding discussion suggests that the increment would be equivalent to between 25 and 75 basis points. In financial markets where the spread between Title XII interest rates and municipal bonds have generally exceeded 100 basis points (column [8] of Table 4), these additional costs still imply a lower overall interest rate from issuing municipal bonds. The interest rate cost advantage is, of course, even larger when the comparison involves short-term debt instruments as in columns [10] and [11] of Table 4.

To summarize, a generic comparison of Title XII borrowing versus borrowing in the bond market leads to three conclusions. 1) The principal upon which interest is charged is always lower for Title XII loans. 2) The effective interest rate under a bond issuance (including the added costs just discussed) will be lower than the Title XII interest rate. 3) The difference in costs under the two forms of borrowing is ambiguous. However, as the interest differential in favor of private debt instruments is larger, it becomes increasingly likely that this will be the less expensive of the two options.

In earlier work where the comparative costs (Title XII versus municipal bonds) were assessed for Louisiana and West Virginia, I concluded that the costs of municipal bond issuance were not clearly lower for either of these two states.<sup>24</sup> Obviously, as the spread between Title XII interest rates and other interest rates is larger, it becomes more likely that the borrowing in the private bond market will lead to cost savings vis-à-vis using Title XII loans. It also seems likely that the largest savings will be realized (at least in the current financial environment) when a state borrows by issuing short term debt instruments with their very low interest rates as illustrated in Table 4.

## VII. UI Programs After Bond Issuances

Does issuing bonds have effects on subsequent UI program performance? Since just three states have fully repaid the loans secured from “bonding,” the range of experiences to date is very limited. This section examines two aspects of post-bonding performance: trust fund accumulations and benefit payments. The latter considers both the reciprocity rate (beneficiaries as a share of statewide unemployment) and the replacement rate (weekly benefits as a proportion of weekly wages). The discussion focuses on the years 1979 to 2004 and places heavy emphasis on charts to make a few key points.

Chart 6 displays reserve ratio multiples for the three states. Recall that Louisiana and West Virginia issued bonds in 1987 and Connecticut in 1993. Recall also that having a reserve ratio multiple of 1.0 is frequently used as a measure of trust fund solvency.

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<sup>24</sup> See Chapter 4 in Wayne Vroman, Topics in Unemployment Insurance Financing, (Kalamazoo, MI: W.E. Upjohn Institute, 1998).

Reserves underlying Chart 6 are measured as the total balances held at the U.S. Treasury and do not subtract outstanding balances owed in the private bond market. Thus while these debts were still outstanding, the multiples shown in Chart 6 overstate the net solvency position of the three states.<sup>25</sup>

In all three states the bond issuance had a large effect on the state's trust fund balance. For both Louisiana and West Virginia, the reserve ratio multiple at the end of 1987 was higher by about 1.0 than one year earlier. The increase for Connecticut between 1992 and 1993 was about 0.5.<sup>26</sup>

As their bonds were being repaid, the three states also were increasing reserves in their U.S. Treasury balances. The reserve ratio multiple for Louisiana increased steadily throughout the decade after bonds were issued. The multiple first reached 1.0 at the end of 1995 and has remained above 1.0 through 2004. For West Virginia and Connecticut, the multiples peaked at about 0.5 and have never substantially exceeded this level.

All three states have had quite favorable trust fund experiences during and after the recession of 2001. Between December 2000 and December 2003 the national reserve ratio multiple decreased by 0.41, from 0.66 to 0.25. The analogous decreases for Connecticut, Louisiana and West Virginia, however, were 0.21, 0.10 and 0.05 respectively. All eight states with Title XII loans in the current recession (identified in Panel A of Table 1) had larger decreases in their multiples and seven (all but New York) had decreases that exceeded the national average of 0.41. Given their low initial reserve ratio multiples entering the recession, Connecticut and West Virginia have been fortunate in the small decreases in their reserve ratio multiples during 2001-2004.

States with UI trust fund solvency problems have traditionally addressed their problems with policies that both increase taxes and reduce UI benefits. Each of these three states followed this route. Chart 7 traces four series over the 1979-2003 period showing reciprocity rates and replacement rates. Reciprocity in Louisiana and West Virginia decreased after 1986, by ten percentage points in Louisiana and nine percentage

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<sup>25</sup> Repayment was completed in West Virginia in 1991, Louisiana in 1994 and Connecticut in 2001.

<sup>26</sup> Note incidentally that Connecticut also had a large deficit at the end of the 1970s. In fact, it had Title XII loans continuously outstanding between 1972 and 1984.

points in West Virginia.<sup>27</sup> Louisiana's and Connecticut's replacement rates both decreased substantially in the years following "bonding." Specific policy changes that contributed to the changes in replacement rates included moving to a two-high-quarter procedure for calculating weekly benefits in Connecticut and both reducing and freezing the weekly benefit maximum in Louisiana.

Finally, note in Chart 7 that the benefit series increase between 2000 and 2003. While explaining the cause(s) of these recent changes is beyond the scope of this paper, a likely explanation is a shift in the mix of the claimants towards high wage and experienced workers. Considering Chart 6 along with Chart 7, it appears the improvement in Louisiana's trust fund reserve position after 1987 is substantially due to benefit restrictions that have reduced both the reciprocity rate and the replacement rate.

In sum, for the three states where the processes of issuing and repaying municipal bonds have been completed, only one (Louisiana) subsequently built a large reserve that meets the common UI actuarial standard, i.e., a reserve ratio multiple of 1.0. The fact that the other two states have not experienced financing problems following the 2001 recession has more to do with favorable economic developments than with having large pre-recession trust fund reserves. In two of these three states, issuing bonds was not followed by policies to build trust fund balances to levels widely viewed as prudent.

## VIII. Conclusions

This paper examined state experiences with funding problems following the recession of 2001. Five final observations can be offered.

First, the states have undergone a variety of experiences related to the size of their trust fund drawdowns and the types of loans used to address their funding problems. At this time (January 2005), the full set of state situations even includes inaction by both California and New York. Their actions remain to be determined.

Second, there are no real surprises in the identities of the states that have had to borrow. As shown in Panel A of Table 1, all had low trust fund balances at the end of

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<sup>27</sup> In Louisiana the average reciprocity rates during 1979-1986 and 1988-1995 were 0.294 and 0.187 respectively. The corresponding averages in West Virginia were 0.307 and 0.214.

December 2000, just before the onset of the recession of 2001. Just one of the nine (North Carolina) had a reserve ratio multiple above 0.60 on that date. Table 1 also vividly shows that the funding problems have been concentrated among the large states.

Third, the states fully understand how Title XII cash flow loans operate. Several state actions in borrowing and repaying have been timed to avoid interest charges on Title XII loans, e g., by ensuring that full repayment occurs before September 30<sup>th</sup> and no new borrowing occurs during October-December. Further, Massachusetts and Pennsylvania have undertaken other actions linked to Title XII borrowing requirements. Under legislation of 2003, Massachusetts can avoid borrowing during October-December by levying a solvency assessment imposed in September. During March-May 2004 Pennsylvania borrowed from another state fund to preserve access to Reed Act monies in its UI trust fund to be used for improving UI program administration.

Fourth, in comparing the costs of borrowing under Title XII versus the private bond market, the former consistently has a smaller principal on outstanding debt while the latter consistently has a lower interest rate (even recognizing underwriting fees, insurance and other issuance costs and early redemption premiums). Thus to compare costs, one must recognize both the average amount of outstanding loans as well as the interest rates on the loans. As the interest rate spread between Title XII loans and private debt instruments is larger, it becomes increasingly likely that the latter will carry lower total borrowing costs for a state.

Fifth, if a state explores the private securities market, it is important to consider the full range of maturities within this market. To minimize interest costs, it may be least expensive to borrow in the very short end of this market from late September to the end of December, to repay this debt in the early months of the following year and to rely on Title XII loans from January to late September of the next year. This is the strategy currently being followed by North Carolina.

Table 1. Summary of Trust Funds, Borrowing and Solvency Legislation in Selected States, Information Through December 31, 2004

State Size Rank [1]	Res. Ratio Multiple Dec. 2000 [2]	Res. Ratio Multiple Dec. 2003 [3]	Change in RRM [3]-[2] [4]	Year of First Loan [5]	UI Debt (\$millions) Dec. 2003 [6]	UI Debt (\$millions) Dec. 2004 [7]	Experience Rating Response [8]	Solvency Legislation [9]	Bond/Note Authorization [10]	Bond/Note Issuance [11]
Panel A. States that have borrowed										
California	1	0.51	0.09	-0.43	2004	0	0	Yes	No	No
Illinois	5	0.42	-0.10	-0.52	2003	511	712	Yes	2003	Yes
Massachusetts	13	0.55	0.02	-0.54	2004	0	0	Yes	2003	No
Minnesota	15	0.50	-0.11	-0.61	2003	176	123	Yes	2003	No
Missouri	19	0.36	-0.10	-0.46	2003	143	288	Yes	2004	No
New York	2	0.16	-0.10	-0.26	2002	751	691	Yes	No	No
North Carolina - a	12	0.69	-0.07	-0.76	2003	172	269	Yes	No	Yes
Pennsylvania	6	0.58	0.15	-0.43	2004	0	0	Yes	No	No
Texas	3	0.24	-0.19	-0.43	2002	1400	1167	No	2003	Yes
Panel B. States with low reserves at the end of 2003										
Arkansas	33	0.42	0.09	-0.33		0	0	Yes	2003	No
Colorado	21	0.91	0.15	-0.76		0	0	Yes	No	
Connecticut	22	0.41	0.20	-0.21		0	0	Yes	No	
Michigan	9	0.59	0.24	-0.35		0	0	Yes	No	
Ohio	7	0.50	0.19	-0.31		0	0	Yes	No	
Virginia	11	0.84	0.17	-0.67		0	0	Yes	2003	No

Source: Entries based on data from the Office of Workforce Security, U.S. Department of Labor, and from information gathered by the author. a - Net reserves in December 2000 include \$200 million in the state's reserve fund.

Table 2. Solvency Adjustments in Selected States

	Illinois	Massachusetts	Minnesota	Missouri	North Carolina	Pennsylvania	Texas
Solvency Legislation in 2003 or 2004	Yes	Yes	Yes	Yes	No	No	Yes
<b>Benefit Reductions</b>							
Monetary Eligibility	Y-a			X			
Replacement Rate	X					X	
Maximum WBA	X		X	X,Y		X	
Maximum Duration		X					
Waiting Week				X,Y			
Other Reductions		X-b	X-c	X-d			
<b>Increased Taxes</b>							
Solvency Taxes	X	X	Z	X		Z	W
Max Rated Employers	X	X		X			
Tax Schedule Triggers			X				
Taxable Wage Base	X	X		X			
<b>Borrowing Activities</b>							
Loans from U.S. Treas.	X	X	X	X	X		X
Bond/Note Authorization	X			X	X		X
Bond/Note Issuance	X				X		X
Loan from State Account						X	

Key: X = Benefit reduction, tax increase, or loan-related activity

Y = Benefit increase

Z = Increases in two solvency tax provisions in Minnesota and three provisions in Pennsylvania.

W = Reduction in solvency taxes

a - Alternative base period created, to become operative in 2008.

b - Increased penalties for fraud and overpayments, tightened eligibility for employees of temporary help agencies

c - New UI benefit offsets against severance pay and vacation pay

d - Increased penalties for misconduct, new language for misconduct related to drug and alcohol abuse

Table 3. Loans to UI Programs from the Private Debenture Market

State	Issuance Year [1]	Loan Authorization [2]	Loan Amount [3]	Loan/Pct.-a Payroll, [4]	Maximum Bond Maturity [5]	Fixed Rate Bonds [6]	Variable Rate Bonds [7]	Some Bonds Callable? [8]	Some Bonds Convertible? [9]	Year Fully Repaid [10]
Recessions before 2001										
Louisiana	1987	1315	1315	6.3	2002	Yes - 1315		Yes		1994
West Virginia	1987	258	258	3.2	1993	Yes - 258		Yes		1991
Connecticut	1993	1142	1021	2.6	2001	Yes - 450	Yes - 571	Yes	Yes	2001
2001 Recession										
Texas	2003	2,000	1,400	0.5	2009	Yes - 800	Yes - 600	Yes	Yes	
North Carolina	2003	b	172 - b	0.2						
Illinois	2004	1,400	712	0.4	2013	Yes - 340	Yes - 372	Yes	Yes	
Missouri	2004	450								

Source: Information supplied to the author by individual states. Amounts in millions of dollars.

a - Loan amount as a percent of total state payroll of taxable covered employers in the year of issuance.

b - Borrowing authorized by administrative action. Amount determined on an "as needed" basis. \$172 million borrowed in 2003.

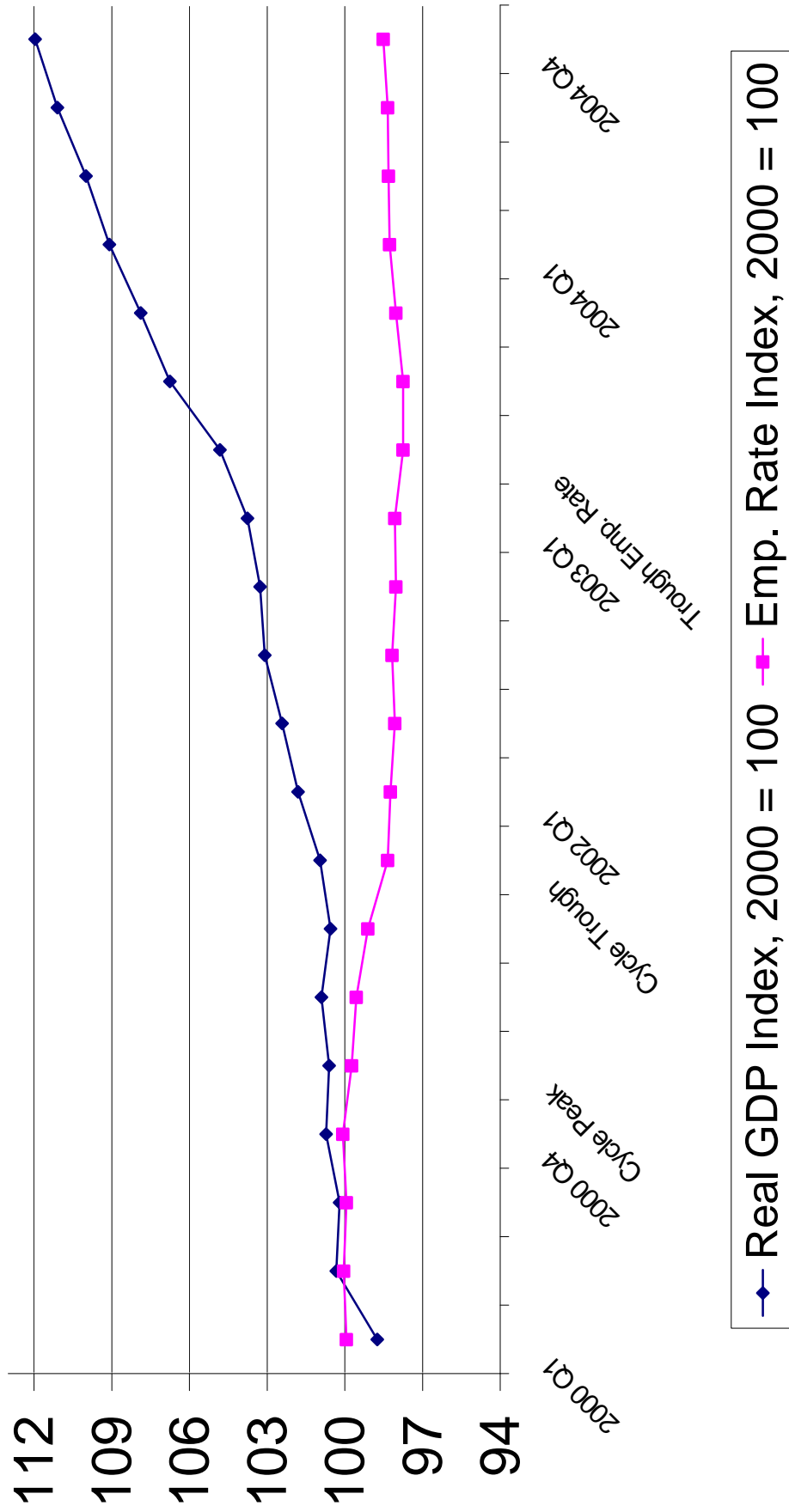


Table 4. Selected Interest Rates and Interest Rate Spreads, 1990 to 2004.

	Interest Rates										Basis Point Spreads			
	Title XII Loans	Moody's AAA Corp. Bonds	S & P High Grade Municipal Bonds	Three Year Treasury Securities	One Year AAA Municipal Notes	Three Month Treasury Bills	One Month Commer- cial Paper	Title XII less Municipal Bonds	Corp. Bonds less Municipal Bonds	Municipal Bonds less One year Municipals	Title XII less One Year Municipals			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]			
1990	8.70	9.32	7.25	8.26	NA	7.75	NA	145	207	NA	NA			
1991	8.60	8.77	6.89	6.82	4.69	5.54	NA	171	188	220	391			
1992	8.05	8.14	6.41	5.30	3.02	3.51	NA	164	173	339	503			
1993	7.45	7.22	5.63	4.44	2.52	3.07	NA	182	159	311	493			
1994	6.90	7.97	6.19	6.27	3.53	4.37	NA	71	178	266	337			
1995	6.83	7.59	5.95	6.25	3.98	5.66	NA	88	164	197	285			
1996	6.71	7.37	5.75	5.99	3.62	5.15	NA	96	162	213	309			
1997	6.71	7.27	5.55	6.10	3.72	5.20	5.57	116	172	183	299			
1998	6.51	6.53	5.12	5.14	3.48	4.91	5.40	139	141	164	303			
1999	6.45	7.05	5.43	5.49	3.46	4.78	5.09	102	162	197	299			
2000	6.45	7.62	5.77	6.22	4.30	6.00	6.27	68	185	147	215			
2001	6.42	7.08	5.19	4.09	2.76	3.48	3.78	123	189	243	366			
2002	6.27	6.49	5.05	3.10	1.64	1.64	1.67	122	144	341	463			
2003	6.08	5.66	4.75	2.10	1.05	1.03	1.11	133	91	370	503			
2004	5.98	5.63	4.68	2.78	1.42	1.40	1.38	130	95	326	456			

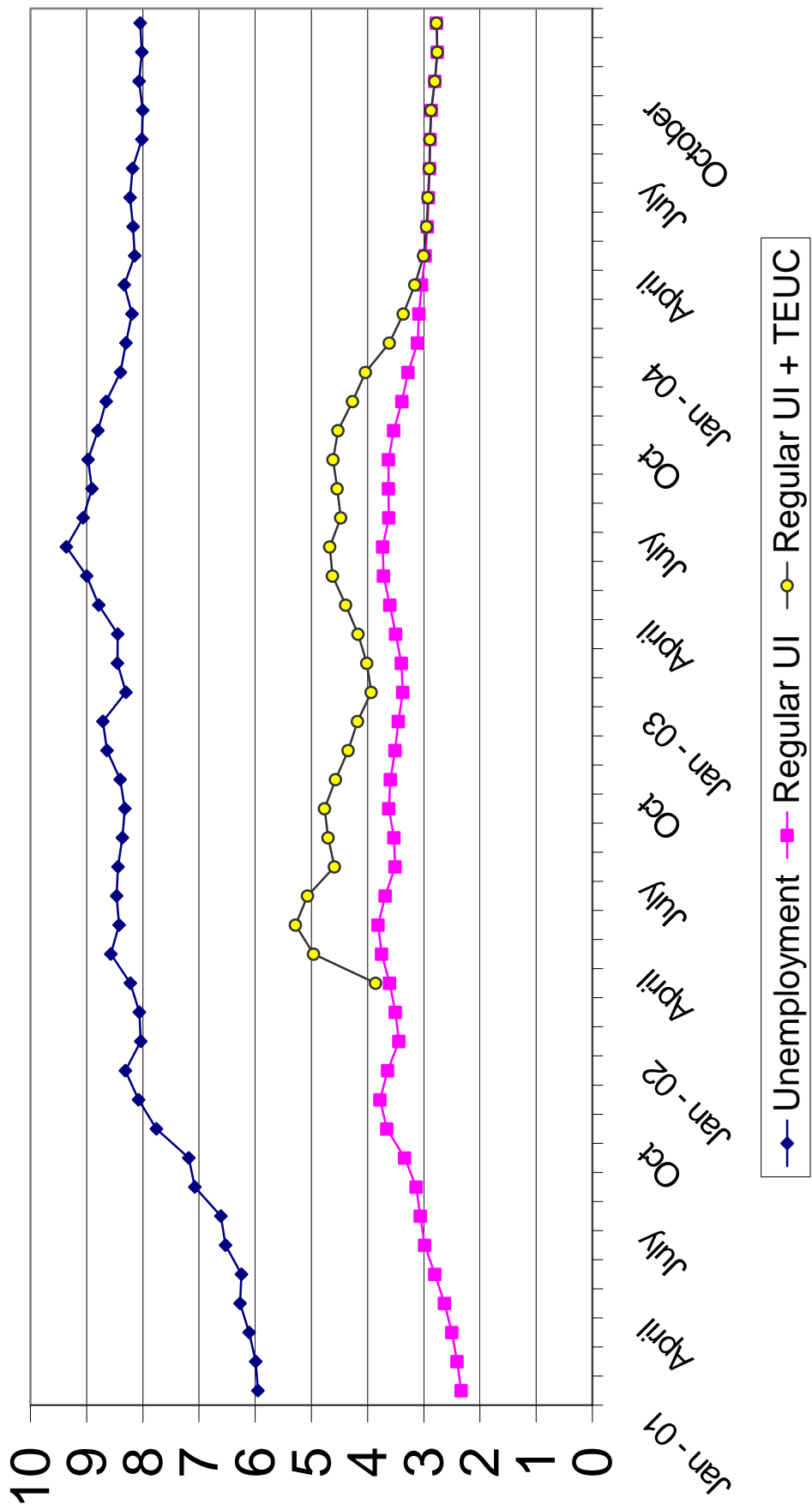
Source: Table B-73 of the Economic Report of the President, January 2004 and Federal Reserve Bank of St Louis website.  
 Data for all years are annual averages except for Title XII loans during 1997-1999 which refer to the fourth quarter.  
 Each percentage point of an interest rate equals 100 basis points. NA - Data not available.

# Chart 1. Quarterly Indices of Real Output and the Employment Rate, 2000 Q1 to 2004 Q4



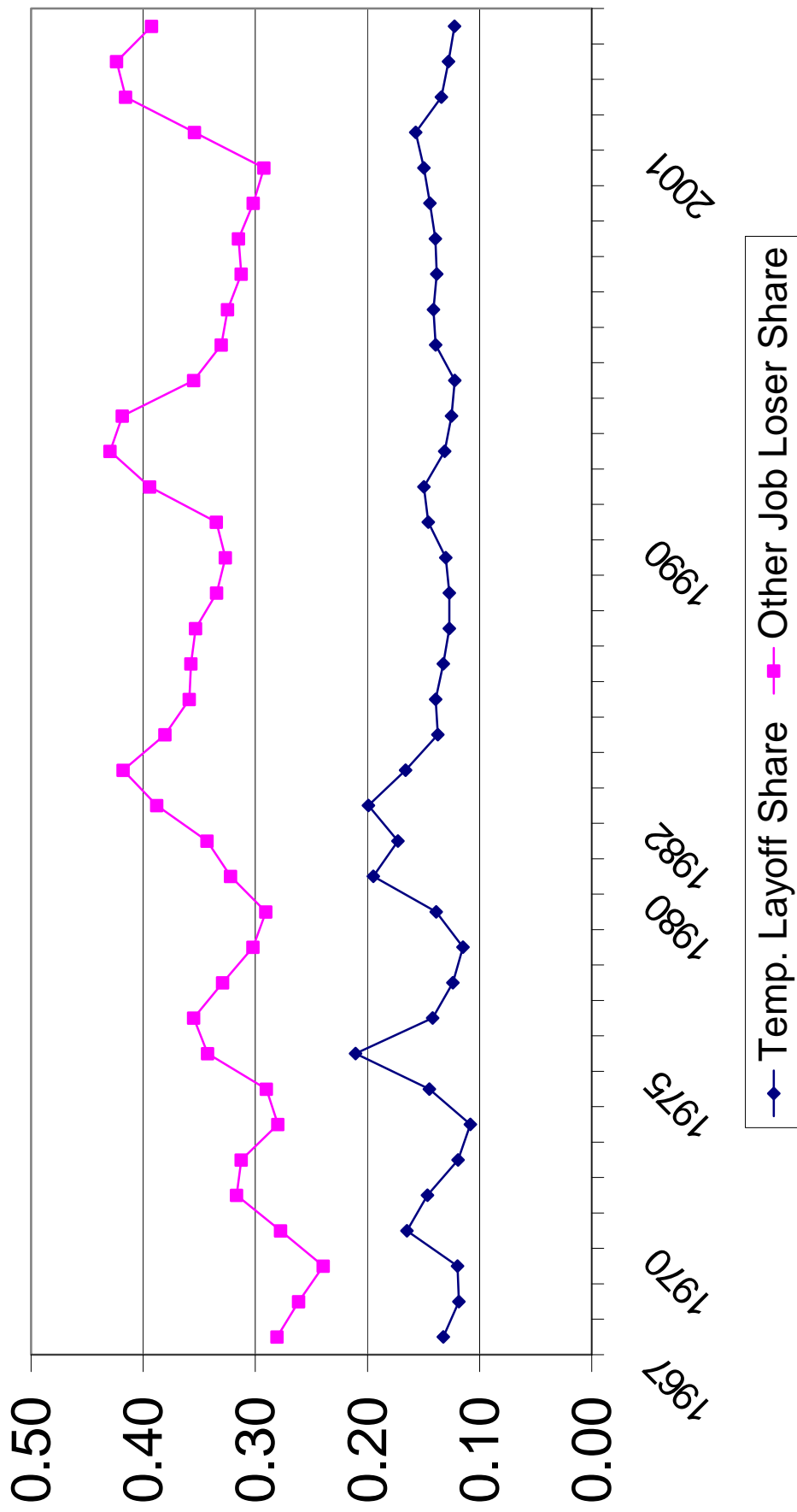
Based on data for real GDP and the employment rate (100 less the unemployment rate). Real GDP growth in 2004 Q4 was 3.1 percent.

# Chart 2. Unemployment and UI Claimants, January 2001 to December 2004 (in millions)



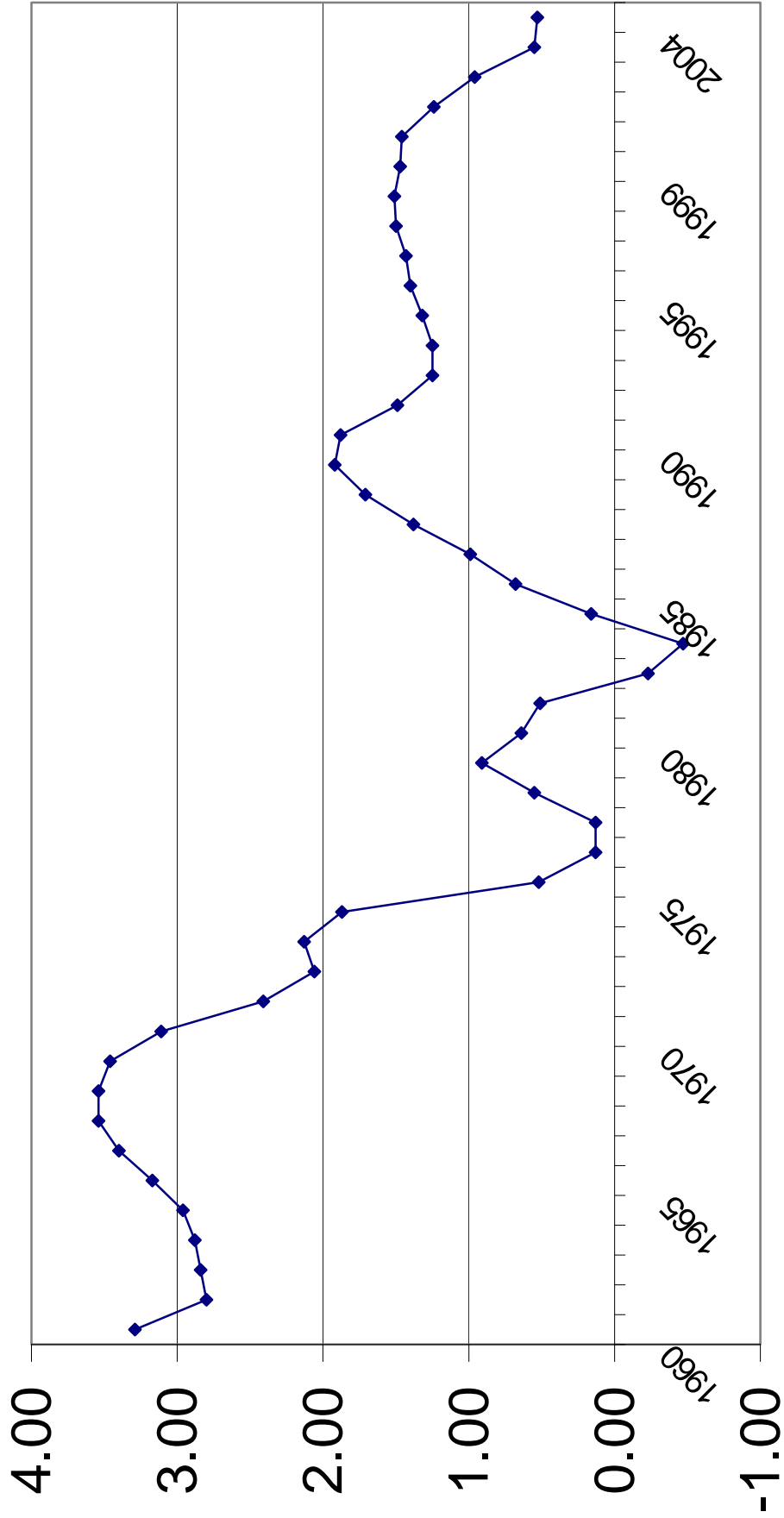
All data are seasonally adjusted.

### Chart 3. Temporary Layoff and Other Job Loser Shares of Unemployment, 1967 to 2004



Data show proportions of total unemployment. Other job losers includes persons who completed temporary jobs as well as permanent job losers.

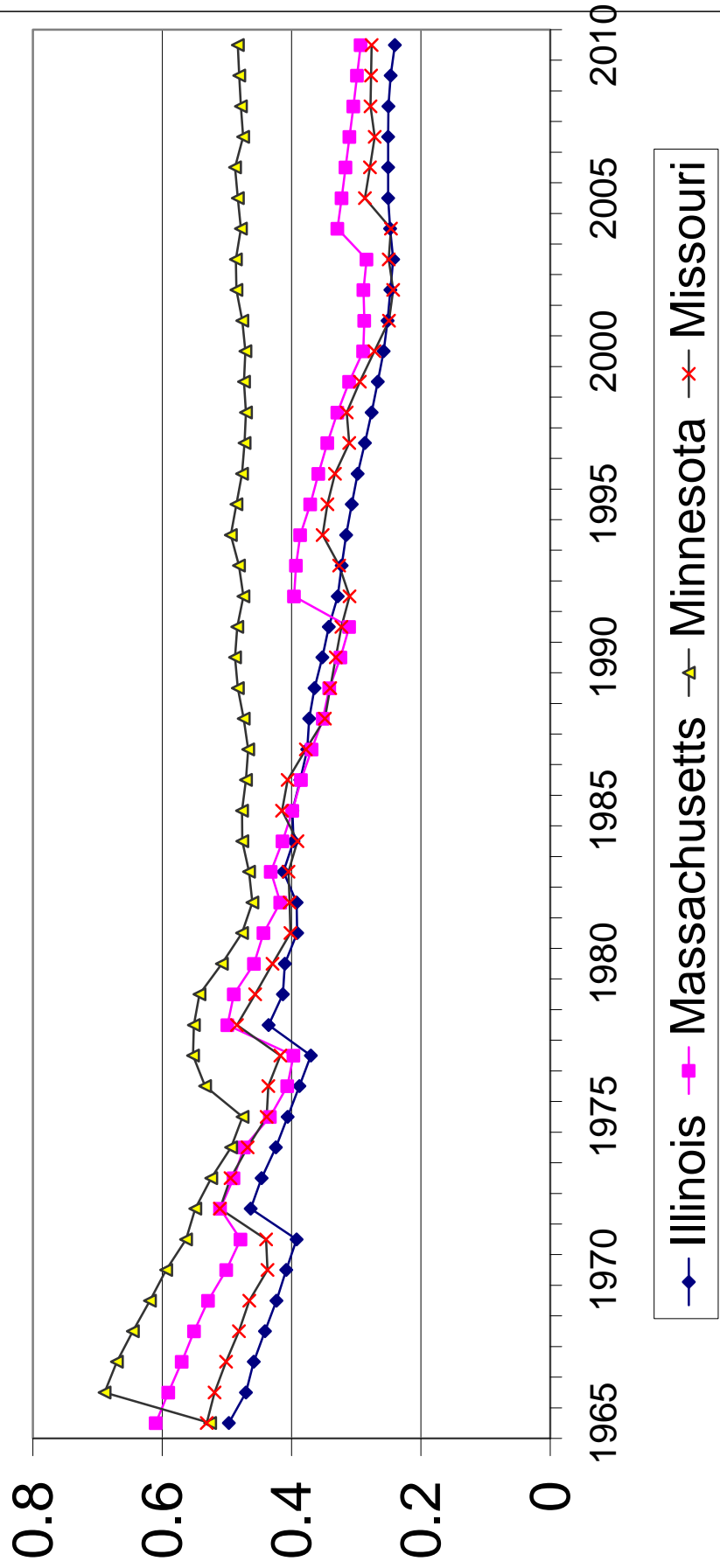
Chart 4. Aggregate UI Reserve Ratio, 1960 to 2004



— Reserve Ratio - Net Reserves as Percent of Payroll, December 31

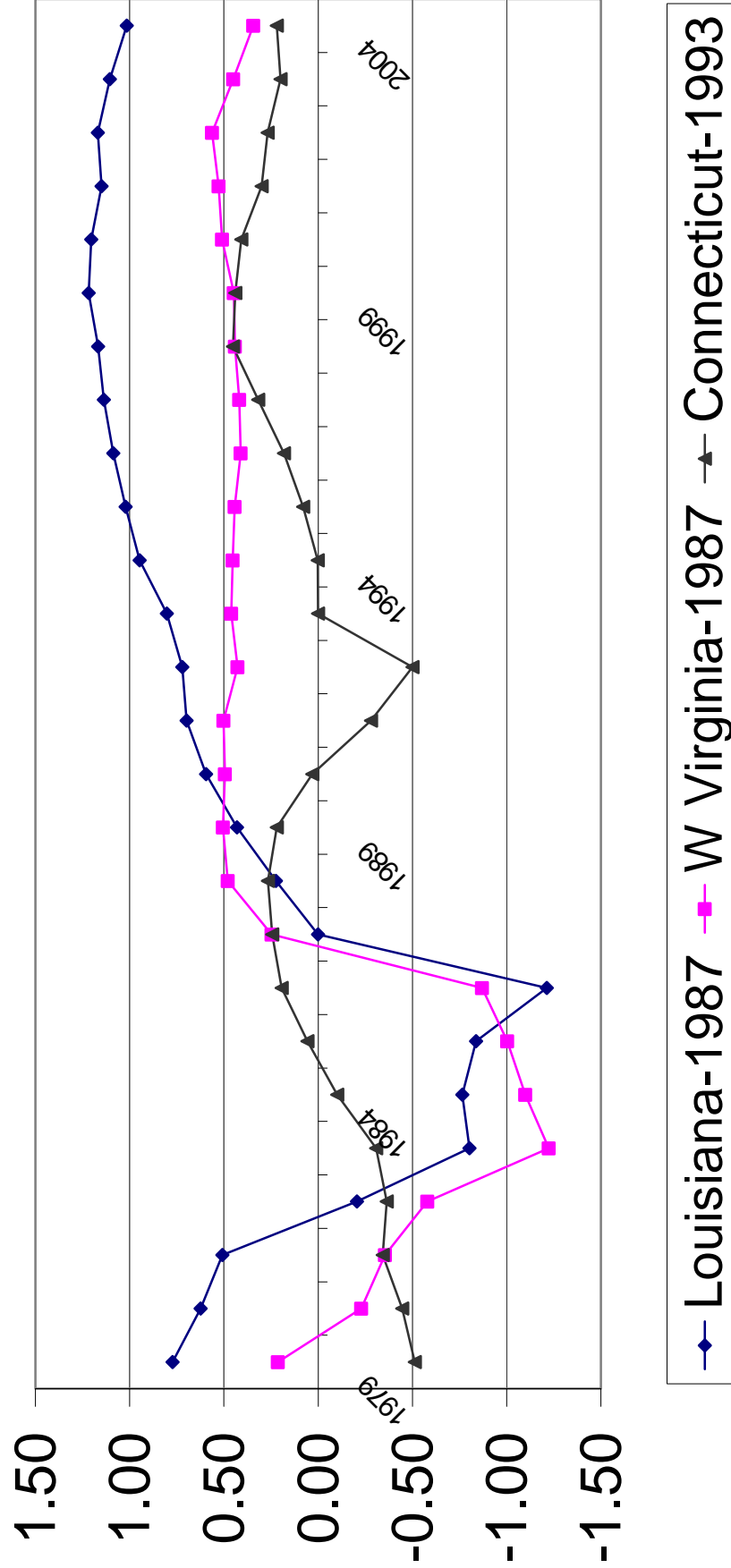
Data from the Office of Workforce Security, U.S. Department of Labor.

# Chart 5. Taxable Wage Proportions for Four States: Actual (1965-2003) and Projected (2004-2010)



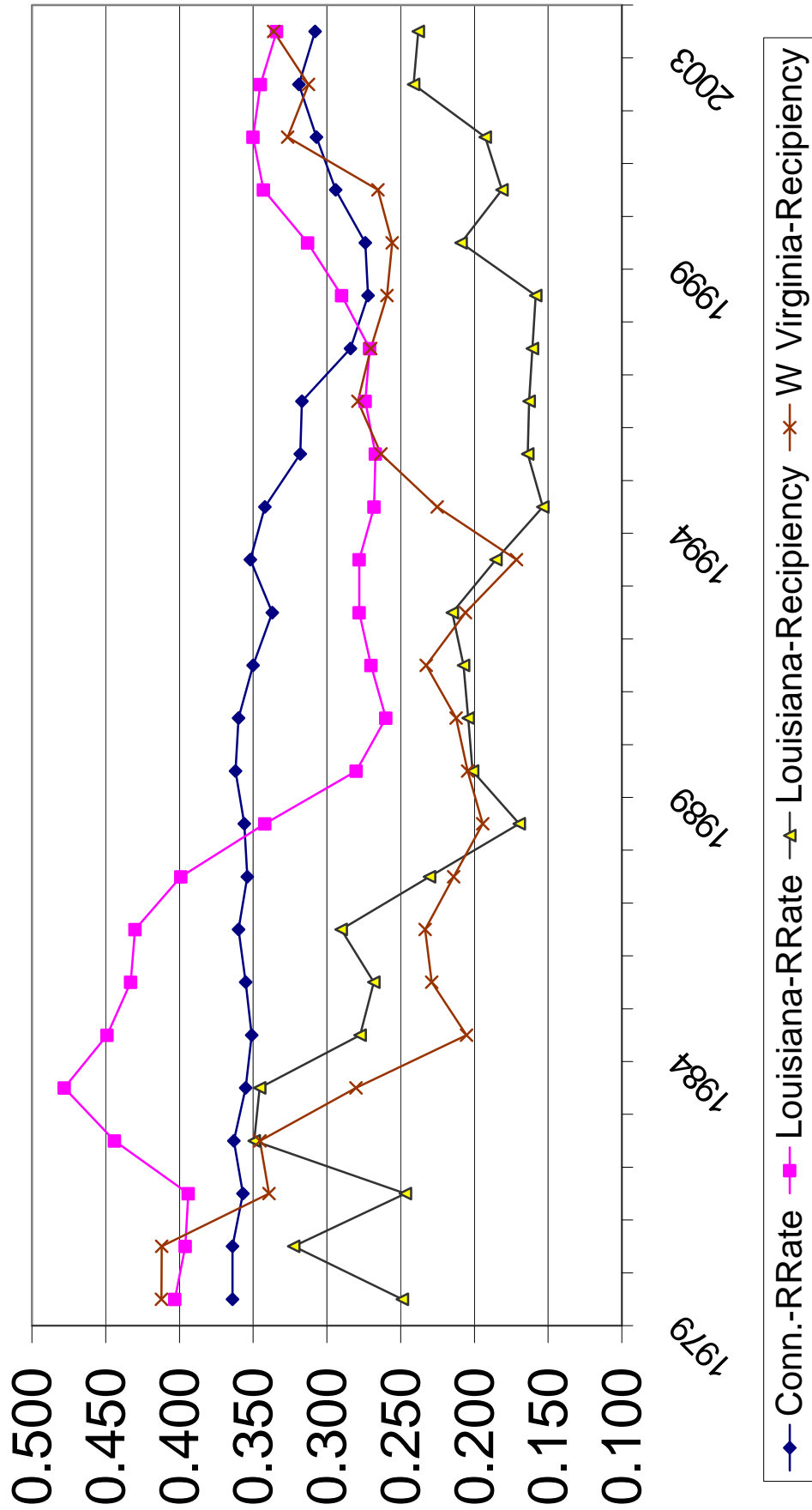
Data from 1965 to 2003 from Office of Workforce Security, U.S. Department of Labor. Estimates for 2004 to 2010 made by author.

# Chart 6. Reserve Ratio Multiples, States Issuing Bonds, 1979 to 2004



Legend identifies year when these states issued municipal bonds. Data from Office of Workforce Security, U.S. Department of Labor. Reserves refer just to gross amounts held at (or owed to) the U.S. Treasury.

# Chart 7. Reciprocity Rates and Replacement Rates, States Issuing Bonds, 1979 to 2003



Data from Office of Workforce Security and Bureau of Labor Statistic, U.S. Department of Labor. Reciprocity rates calculated as the ratio of UI beneficiaries to total unemployment.