# States with Minimum Wages above the Federal Level have had Faster Small Business and Retail Job Growth 

## Fiscal Policy Institute

One Lear Jet Lane
Latham, NY 12110
518-786-3156

11 Park Place, Suite 701 New York, NY 10007

212-721-5624
www.fiscalpolicy.org

March 30, 2006
(Update of a report first published by the Fiscal Policy Institute in April 2004)

Fiscal Policy Institute

## Preface

This is an update of a report published by the Fiscal Policy Institute in April 2004 that examined the relationship of minimum wages to total state job growth and to small business economic performance on a state level. This update was prepared by the Fiscal Policy Institute's Chief Economist, James Parrott, and Brent Kramer, Research Associate. Oliver Cooke, now an Assistant Professor of Economics at Stockton State College, co-authored the 2004 paper with Parrott.

The original report was prepared as part of a series of reports that FPI published in 2004 on various aspects of the minimum wage:

- Raising the Minimum Wage in New York: Helping Working Families and Improving the State's Economy, January, 2004. Available at: http://www.fiscalpolicy.org/minmumwagereportrevised20jan2004.pdf
- Immigrant Workers and the Minimum Wage in New York City, March 2004. Available at: http://www.fiscalpolicy.org/ImmigrantWorkers\&MinimumWage.pdf
- State Minimum Wages and Employment in Small Businesses and Retail Trade, April 2004. Available at: http://www.fiscalpolicy.org/minimumwageandsmallbusiness.pdf
- Setting the Record Straight: An Increase in New York's Minimum Wage Will Help Those Who Need It, July 2004. Available at: http://www.fiscalpolicy.org/FPIminimumwage19July2004.pdf.

We are grateful to the Economic Policy Institute for providing technical assistance on many aspects of the minimum wage issue. We also wish to acknowledge the generous support for the work of the Fiscal Policy Institute by the Rockefeller Foundation, the Charles H. Revson Foundation, the Ford Foundation and the Charles Stewart Mott Foundation.

## About the Fiscal Policy Institute

The Fiscal Policy Institute (FPI) is a nonpartisan research and education organization that focuses on the broad range of tax, budget, and economic and related public policy issues that affect the quality of life and the economic well being of New York State residents. Founded in 1991, FPI's analyses are intended to further the development and implementation of public policies that create a strong, sustainable economy in which prosperity is broadly shared by all New Yorkers. FPI has offices in Albany and New York City. FPI's website is: www.fiscalpolicy.org.

## Executive Summary

Some observers contend that because many small businesses are labor intensive and largely employ low-wage workers, they will experience sharp cost increases when the minimum wage is increased, leading them to reduce employment levels. However, this report examined recent state-by-state trends for small businesses employing fewer than 50 workers and found that employment and payrolls in small businesses grew faster in the states with minimum wages above the federal level than in the remaining states where the $\$ 5.15$ an hour federal minimum wage prevailed.

This report also found that total job growth was faster in the higher minimum wage states. Faster job growth also occurred in the retail trade sector, the sector of the economy employing the most workers at low wages, in the higher minimum wage states.

The simplistic introductory economics prediction that an increase in the minimum wage will result in job loss clearly is not supported by the actual job growth record. Rather, faced with an increase in the minimum wage, small businesses may have benefited from some combination of higher productivity through improved worker retention and savings on recruitment and training. There may also be a "Henry Ford" effect at work: if you pay workers more, they can buy more, boosting the overall economy, especially among small retail businesses.

The last time the federal minimum wage was increased was in September of 1997. Since then, a growing number of states have raised their own minimum wage levels above the federal $\$ 5.15$ level. By 1999, 10 states and Washington, D.C. had minimum wages above the federal level. The next big wave of increases came in 2005 when five states set their minimums above the federal level. There are currently 18 states, plus the District of Columbia, that have a higher minimum wage. In addition, Michigan recently acted to raise its minimum wage effective October 1, 2006. These 19 higher minimum wage states comprise a diverse set of states and include seven northeastern states (Connecticut, Massachusetts, Maine, New Jersey, New York, Vermont, and Rhode Island), four Midwestern states (Illinois, Michigan, Minnesota, and Wisconsin), the five West Coast states (California, Oregon, Washington, Alaska, and Hawaii), and Delaware, Maryland, Florida, and the District of Columbia. Altogether, the states that have raised their minimum wages account for almost half of the nation's total employment.

In examining state-level small business job growth, the best government data available permits a comparison of 1998 and 2003; the latter is the most recent year for which the data are available. For the 10 states and the District of Columbia that had set their minimum wages above the federal level for most of this period, indicators of economic performance were consistently better than for the other 40 states where the federal minimum wage of $\$ 5.15$ an hour prevailed:

- The number of small businesses across the economy with fewer than 50 employees grew by $5.4 \%$ from 1998 to 2003 in the higher minimum wage states, compared to a $4.2 \%$ increase for the balance of the states; and
- In the higher minimum wage states as a group, small businesses had faster job growth ( $6.7 \%$ vs. $5.3 \%$ for the other 40 states combined); total annual payroll grew more ( $24.5 \%$ vs. $21.2 \%$ ); and average payroll per worker increased by $16.7 \%$, a greater increase than the $15.1 \%$ increase for the 40 states observing the federal minimum wage.

Within the retail trade industry, the sector of the economy most likely to employ low-wage workers, the smallest retailers also consistently fared better in the higher minimum wage states than their counterparts in the other 40 states where the lower federal minimum wage prevailed.

- The number of small retail businesses grew by $0.6 \%$ in the higher minimum wage states (compared to a $0.3 \%$ decline for all other states), the number of employees increased by $4.1 \%$ (versus $2.6 \%$ ), total annual payroll increased by $19.7 \%$ in the higher minimum wage states, and average payroll per worker increased by $15.0 \%$ (versus $16.9 \%$ and $13.9 \%$, respectively, for the other states).

The superior performance of the higher minimum wage states was also demonstrated for total job growth and total retail job growth (that is, job growth among businesses of all sizes).

- Total employment in the higher minimum wage states increased by $9.7 \%$ from January 1998 to January 2006, 30\% greater than the combined job growth of $7.5 \%$ for the other states where the federal minimum wage prevailed; and
- Retail employment grew by $10.2 \%$ in the minimum wage states over this 8 -year period, nearly triple the $3.7 \%$ retail job growth in the other states.

A detailed look at retail employment during the first year after New York increased its minimum wage in January of 2005 also showed no adverse effects:

- Retail employment in New York increased faster from 2004 to 2005 than overall employment, while retail's growth was slower than total employment growth in neighboring states and in the U.S. as a whole; and
- The positive effects of the increased minimum wage on low-wage workers' income were not negated by reduced hours of work.

This analysis does not prove that increasing the minimum wage will boost employment growth over what it otherwise would have been. But it is clear that the prediction that an increase in the minimum wage will result in adverse employment outcomes has not been validated. In fact, this analysis suggests that small employers may benefit from a higher minimum wage because of positive effects on worker retention and productivity and savings on recruitment and training costs. It is clear that higher minimum wages have helped workers get a fairer wage while small businesses have continued to grow.

## Introduction

The question often arises when increases in the minimum wage are considered about the effect on small businesses. Some observers contend that small businesses that are labor intensive and that largely employ low-wage workers will experience sharp cost increases with the result that they will be forced to reduce their employment levels. This claim is consistent with the traditional, simplistic textbook supply and demand theoretical model that holds that an increase in the price of low-wage labor will reduce the demand for labor, i.e., the number of jobs or hours worked.

However, there is now a growing consensus among economists that the traditional theoretical textbook model is incomplete and does not accurately reflect the workings of the low-wage labor market. ${ }^{1}$ More sophisticated models of how the economy operates suggest that employers are likely to respond to a wage increase by improving the skills of their workers and becoming more efficient, and that slightly higher wages would be offset by savings from reduced turnover and higher productivity. Recent historical evidence supports this richer understanding of how labor markets operate. The most revealing commentary on the current state of research regarding the minimum wage is presented in the 1999 Economic Report of the President. This report, which is submitted to Congress annually together with the report of the President's Council of Economic Advisers, stated:

Many studies have examined this issue [the dis-employment thesis], and the weight of the evidence suggests that modest increases in the minimum wage have had very little or no effect on employment. In fact, a recent study of the 1996 and 1997 increases, using several different methods, found that the employment effects were statistically insignificant. ${ }^{2}$

The federal minimum wage was last raised in September of 1997 when it was increased from $\$ 4.75$ to $\$ 5.15$ an hour. At the time of the last federal increase in 1997, only four states (Alaska, Hawaii, Massachusetts, and Oregon) and the District of Columbia had minimum wages above the federal $\$ 5.15$ level. Since that time, 14 other states (California, Connecticut, Delaware, Florida, Illinois, Maine, Maryland, Minnesota, New Jersey, New York, Rhode Island, Vermont, Washington, and Wisconsin) have also raised their state minimum wages, and Michigan is scheduled to join these in October, 2006.

With several states having minimum wage levels above the federal level in recent years, it is now possible to examine employment trends between states having a higher minimum wage and those where the federal minimum wage prevails. This report makes several such comparisons in order to provide an empirical basis for assessing the effects of minimum

[^0]wages on employment, particularly for small businesses. Thus, this report provides comparisons between these two groups of states in terms of:

- total nonfarm employment,
- total retail employment,
- employment and average payroll per worker for all small businesses (defined as those employing less than 50 workers), and
- employment and average payroll per worker for small retail businesses.


## State Minimum Wages

Table 1 on the next page shows federal and state minimum wage changes since 1996. Eighteen states and the District of Columbia now have minimum wages above the $\$ 5.15$ federal level, and Michigan will become the nineteenth in October, 2006. For purposes of employment comparisons, we exclude those states which increased their minimums above the federal level for the first time since the beginning of 2004 (Florida, Illinois, Maryland, Minnesota, New Jersey, New York, and Wisconsin). Thus, for the comparisons of total nonfarm employment and total retail employment, 11 states plus the District of Columbia are considered the "higher minimum wage states".

The analysis of employment and payroll trends for small businesses (defined here as establishments with fewer than 50 employees) compares data for 1998 and 2003. The source for the small business analysis is the U.S. Commerce Department's County Business Patterns (CBP) series; 2003 is the latest year the CBP data are available. Since Maine first increased its minimum wage above the federal level in 2002, Maine is also excluded from the group of minimum wage states for purposes of the small business analysis. Thus, for this analysis, 10 states plus the District of Columbia are considered the "Higher minimum wage states".

As states began increasing their state minimum wages since the last federal increase in 1997, the number of states with higher minimum wages increased from five (plus D.C.) in 1998 to 10 in 1999. The addition of several larger-population states over the past couple of years has brought the share of national employment covered by minimums over $\$ 5.15$ to nearly three times what it was in 1998, and double what it was as recently as 2003. And since several states continued to increase their state minimums, the average minimum wage in states with higher minimums increased each year from 1998 to 2003. ${ }^{3}$ For those states (plus D.C.) with higher minimums than the federal government between 1998 and 2003, the average minimum wage increased from $\$ 5.66$ in 1998 to $\$ 6.74$ in 2003 (see Table 2). None of the wage figures cited here have been adjusted for inflation.

3 The weighted average decreased in 2004 and 2005 when large states enacted minimums lower than the then-current average.

## Table 1: Federal and state minimum wage changes since 1996

(month and date of increase listed below the new minimum wage amount)


Oregon, Washington, and (as of 2006) Florida are adjusted automatically by cost of living each January 1 st.
** A "Minimum Wage Advisory Committee" will review the New Jersey value annually.
Source: Economic Policy Institute; U.S. Dept. of Labor (see: http://www.dol.gov/esa/minwage/america.htm )

# Table 2: Mean effective minimum wage and coverage for those states having higher than $\$ 5.15$ minimum 

| Percent of national non-farm workers <br> covered by higher than federal minimum* |  | Average** minimum <br> for those covered (nominal\$) |
| :--- | :---: | :---: |
| $\mathbf{1 9 9 6}$ |  |  |
| $\mathbf{1 9 9 7}$ |  |  |

## Comparisons between Higher Minimum Wage States and Other States based on Total Employment

Total nonfarm employment in a state can be affected by many factors, particularly the condition of the national economy overall (whether the economy is expanding or contracting), and by the forces affecting the largest and most prominent industries in each state. It is also clear from an examination of total employment trends over the years since the last increase in the federal minimum wage that state minimum wages do not appear to have an adverse effect on total employment. Figure 1 on the next page shows the year-over-year change in total employment for the 11 states (plus the District of Columbia) with higher minimum wages at some point between the last federal increase in 1997 and 2003, compared to the total employment growth for the other 39 states (the states where the $\$ 5.15$ an hour minimum wage prevailed). This figure shows that from the time of the last federal increase in September 1997 through the end of the national expansion (early 2001), employment growth in the higher minimum wage states generally exceeded that of all other states combined. And since the onset of the national recession in March 2001, and the period of weak national job growth from the official end of the national recession in November 2001 through December 2005, job growth in the higher minimum wage states has generally tracked that of the balance of states. (Between 1991 and 1997, most of the "higher minimum wage states" did not have a minimum wage higher than the federal level.)

Over the entire period from January 1998 to January 2006, aggregate employment in the higher minimum wage states (plus D.C.) increased by 9.7 percent. This is 30 percent higher than the combined job growth of $7.5 \%$ for the other 39 states. ${ }^{4}$

Figure 1: Total nonfarm employment growth for 11 higher minimum-wage states (plus D.C.) compared to 39 non-minimum-wage states, Jan. 1991-Dec. 2005


Source: Bureau of Labor Statistics Current Employment Survey, 2005 benchmark series. Analysis by FPI.
Of the 39 states, IL increased its minimum wage for the first time during 2004, and, in 2005, five additional states increased their minimum wage above $\$ 5.15$.

## Comparisons between Higher Minimum Wage States and Other States based on Retail Trade Employment

Retail trade jobs tend to pay the lowest wages among all industries in the economy, and thus are more likely to be affected by the minimum wage than other industries. This section makes the same comparisons as the previous section, except that employment growth is considered just for the retail trade industry. Figure 2 shows the year-over-year change in retail employment for the 11 states (plus the District of Columbia) with higher minimum wages, compared to the total employment for the other 39 states. The results are similar to those in Figure 1: the higher minimum wage states had weaker retail job growth in the early and mid1990s (when most states in this group were still at the federal minimum wage), then job growth that surpassed other states during the period from 1998 through early 2001. While retail job growth fell sharply for both sets of states during the 2001 recession, since then the higher minimum wage states have had consistently stronger retail job growth than the other states.

Over the entire January 1998 to January 2006 period, retail employment grew by 10.2 percent in the 11 higher minimum wage states (plus D.C.), nearly triple the 3.7 percent retail job growth in the other 39 states.

Figure 2: Since 1999, when several states raised their minimum wages above the $\$ 5.15$ federal level, retail job growth in these states has out-performed retail job growth in all other states


Source: Bureau of Labor Statistics Current Employment Survey, 2005 benchmark series. Analysis by FPI.
Of the 39 states, IL increased its minimum wage for the first time during 2004, and, in 2005, five additional states increased their minimum wage above $\$ 5.15$.

## Comparisons for Small Businesses between Higher Minimum Wage States and Other States

As mentioned in the introduction, concern for the effect on small businesses often arises when minimum wage increases are proposed. Most businesses are relatively small employers, and these small employers account for a large share of total employment. This report uses an employment threshold of 50 to define "small businesses". The most comprehensive official government data source for employment and payroll information by employment size of business is the U.S. Commerce Department's County Business Patterns (CBP) series. The latest year the CBP data are available for is 2003 . The CBP series made a switch to the new North American Industry Classification System (NAICS) from the Standard Industrial Classification (SIC) system with the publication of the 1998 data. 1998 was also the first year after the most recent increase in the federal minimum wage, to $\$ 5.15$. Because of this, our analysis compares the years 1998 and 2003.

In 1998, establishments across all industries with fewer than 50 employees accounted for 94.8 percent of all establishments and 41.5 percent of all employment. The average payroll ${ }^{5}$ per

5 Payroll includes all forms of compensation, such as salaries, wages, reported tips, commissions, bonuses, vacation allowance, sick-leave pay, employee contributions to qualified pension plans, and the value of taxable fringe benefits.
worker for small establishments was $\$ 26,939$. This amount was 88 percent of the $\$ 30,609$ average per worker payroll across all establishments.

We compared changes in the number of establishments, employment, total payroll, and average payroll between the 10 higher minimum wage states ${ }^{6}$ (plus D.C.) and the 40 other states. Table 3 summarizes these comparisons. Each of these measures grew faster for the states with minimum wages above the $\$ 5.15$ an hour federal minimum than for the 40 states where the $\$ 5.15$ federal minimum wage prevailed. The number of small employer establishments grew by 5.4 percent in the higher minimum wage states, well above the 4.2 percent rate for the other 40 states. The number of employees in small establishments grew by 6.7 percent between 1998 and 2003, more than 25 percent faster than the 5.3 percent growth pace in the other states. Total annual payroll and average payroll also grew slightly faster in the 10 higher minimum wage states than in the other states.

## Table 3: Growth among small businesses, 1998 to 2003, 10 higher-minimum wage states (plus D.C.) vs. 40 states with federal $\$ 5.15$ minimum wage

All establishments with less than 50 employees, percent change from 1998 to 2003

|  | 10 Higher Minimum <br> Wage States* (plus <br> D.C.) | 40 States with \$5.15 <br> Federal Minimum <br> Wage |
| :--- | ---: | ---: |
| Number of establishments | $5.4 \%$ | $4.2 \%$ |
| Number of employees | $6.7 \%$ | $5.3 \%$ |
| Annual payroll | $24.5 \%$ | $21.2 \%$ |
| Average payroll per worker | $16.7 \%$ | $15.1 \%$ |

*AK, CA, CT, DE, HI, MA, OR, RI, VT, and WA.
Payroll in nominal dollars
Figures do not include most government workers, railroad workers, or self-employed.
Source: U.S. Commerce Department, County Business Patterns.

6 Whereas 11 higher minimum wage states were used earlier, for this analysis, ten higher minimum wage states were used, since the time period under consideration ends with 2003 and Maine did not increase its minimum wage above the federal level until 2002.

## Comparisons for Small Retail Trade Businesses between Higher Minimum Wage States and Other States

Table 4 provides a similar comparison between the 10 higher minimum wage states and the other 40 states, but looking specifically at small retail employers-those who would presumably be most affected by increases in the minimum wage. Again, the results are consistently more favorable for the 10 higher minimum wage states over the 1998 to 2003 period. The number of small establishments increased slightly in the higher minimum wage states, but actually decreased in the other 40 states, and the number of employees working for small retail employers increased by 4.1 percent, more than half again as fast as the 2.6 percent increase for small retail employers in the other states.

## Table 4: Growth among small retail businesses, 1998 to 2003, 10 higher-minimum wage states (plus D.C.) vs. 40 states with federal $\$ 5.15$ minimum wage

All establishments with less than 50 employees, percent change from 1998 to 2003

|  | 10 Higher Minimum <br> Wage States* (plus <br> D.C.) | 40 States with $\$ 5.15$ <br> Federal Minimum <br> Wage |
| :--- | ---: | ---: |
| Number of establishments | $0.6 \%$ | $-0.3 \%$ |
| Number of employees | $4.1 \%$ | $2.6 \%$ |
| Annual payroll | $19.7 \%$ | $16.9 \%$ |
| Average payroll per worker | $15.0 \%$ | $13.9 \%$ |

*AK, CA, CT, DE, HI, MA, OR, RI, VT, and WA.
Payroll in nominal dollars
Figures do not include most government workers, railroad workers, or self-employed.
Source: U.S. Commerce Department, County Business Patterns.

## Detailed analysis of trends in New York since the minimum wage increase

After the New York legislature overrode a veto by Governor Pataki, the first phase of a threestage minimum wage increase went into effect on January 1, 2005, increasing the state minimum wage from $\$ 5.15$ an hour to $\$ 6.00$ an hour. ${ }^{7}$ We examined the employment effects of this change. Employment effects can be part of national or regional trends, so we compared employment changes in New York with national changes, and with changes in four abutting states (Vermont, which has a very small population, was not included). We looked at total employment, but we also separated out retail trade employment, which is noted for having substantial numbers of low-wage employees.

These comparisons (see table 5) show that retail employment and total employment both grew in all three cases (New York alone, the four neighboring states, and the whole nation), between 2004 and 2005. But low-wage growth relative to total employment growth was highest in New York, nearly twice as high as the nation as a whole and more than triple that of the surrounding states. This analysis further weakens the argument that increases in minimum wage will adversely affect low-wage employment.

Table 5: Relative to New York's total job growth, job growth in retail trade has fared well since the January 2005 minimum wage increase.

|  | Average employment (000s) <br> New York State | $\mathbf{2 0 0 4}$ |  | Ratio of change <br> in retail to |
| :---: | :---: | ---: | :---: | :---: |
| All non-farm |  |  |  | Change |
| Retail trade | $8,461.9$ | $8,528.3$ | $0.8 \%$ |  |
| Four neighboring states change |  |  |  |  |

*Massachusetts and Connecticut had higher minimums, but did not change them in 2005;
Pennsylvania had none; and New Jersey's new minimum did not take effect until October, 2005.
Source: Bureau of Labor Statistics Current Employment Survey, 2005 benchmark series

While low-wage employment, as represented by retail trade, was not adversely affected, employers might have lowered costs and diminished the effectiveness of the increased minimum wage by reducing the hours worked by low-wage workers. For workers with the

8 The minimum wage in NY went to $\$ 6.75$ on January 1, 2006, and will go to $\$ 7.15$ on January 1, 2007.
lowest wages, however, we found that both mean and median hours of work per week went $u p$ from 2004 to 2005 (Table 6). Thus, it does not appear that low-wage employees lost the benefit of their wage increase through decreased hours of work.

Table 6: Hours worked by low-wage workers, before and after January 1, 2005, minimum wage increase in New York

|  | Lowest tenth by wage |  | Second tenth by wage |  |
| :---: | :---: | ---: | ---: | ---: |
| Mean hours worked per week | $\mathbf{2 0 0 4}$ | $\mathbf{2 0 0 5}$ | $\mathbf{2 0 0 4}$ | $\mathbf{2 0 0 5}$ |
| Median hours worked per week | 30.7 | 31.3 | 33.9 | 34.7 |
| Decile cutoff | 32.0 | 33.5 | 40.0 | 40.0 |
|  | $\$ 7.00$ | $\$ 7.00$ | $\$ 8.50$ | $\$ 8.75$ |

Annual average hours worked per week computed for those with positive wages and hours.
Source: Current Population Survey ORG files, analysis by FPI.

## Conclusions

A growing body of both empirical and theoretical work has called into question the long-held prediction that a higher minimum wage will reduce the number of jobs. A more nuanced model of how the economy operates has superceded the simplistic supply and demand theoretical model that is the basis for this prediction. This more sophisticated labor market model suggests that employers are likely to respond to a wage increase by improving the skills of their workers and becoming more efficient, and that slightly higher wages would be offset by savings from reduced turnover and higher productivity. Recent empirical evidence supports this new theoretical understanding. As the 1999 Economic Report of the President indicated, studies of the 1996 and 1997 federal minimum wage increases found that there were no adverse employment effects.

In the eight and a half years since the federal minimum wage was last increased, several states have enacted and maintained state minimum wage levels above the federal $\$ 5.15$ hourly minimum. It is now possible to make job growth comparisons over several years between a set of states that have had higher minimum wages than the federal level for a number of years and the remaining states where the $\$ 5.15$ federal minimum wage has prevailed for most of the period since 1997. This report makes such comparisons, for employment in all industries together and for the retail trade industry, the lowest-wage industry and thus the industry most likely to be affected by the minimum wage. The results clearly point toward no adverse employment effects in the higher minimum wage states between January 1998 and January 2006. In fact, the findings show that job growth in the higher minimum wage states surpassed that in the remaining states. A detailed comparison in New York showed that retail employment grew faster than employment as a whole after that state's minimum wage increase in 2005.

It is sometimes suggested that small businesses are the most vulnerable to minimum wage increases. Some observers contend that small businesses that are labor intensive and that largely employ low-wage workers will experience sharp cost increases, leading them to reduce employment levels. This report also examined the trends in employment and total payroll for small businesses employing fewer than 50 workers in the higher minimum wage states compared to the remaining states. For the 1998 to 2003 period for which analysis is possible using the latest Commerce Department data, employment and payroll growth in the higher minimum wage states consistently performed better than in the remaining states.

This analysis should further call into question notions that an increase in the minimum wage will hurt small businesses overall or employment in small businesses in the aggregate.


[^0]:    1 For a discussion of the economic research literature on this issue, see the Appendix in Raising the Minimum Wage in New York: Helping Working Families and Improving the State's Economy, January 2004, Fiscal Policy Institute. This report is available at: http://www.fiscalpolicy.org/minmumwagereportrevised20jan2004.pdf
    2 Economic Report of the President, 1999, p. 112.

