

# Robust Fiscal Stabilization

Alan J. Auerbach and Danny Yagan

September 27, 2024

# Data: CBO's semiannual legislated changes to the primary deficit

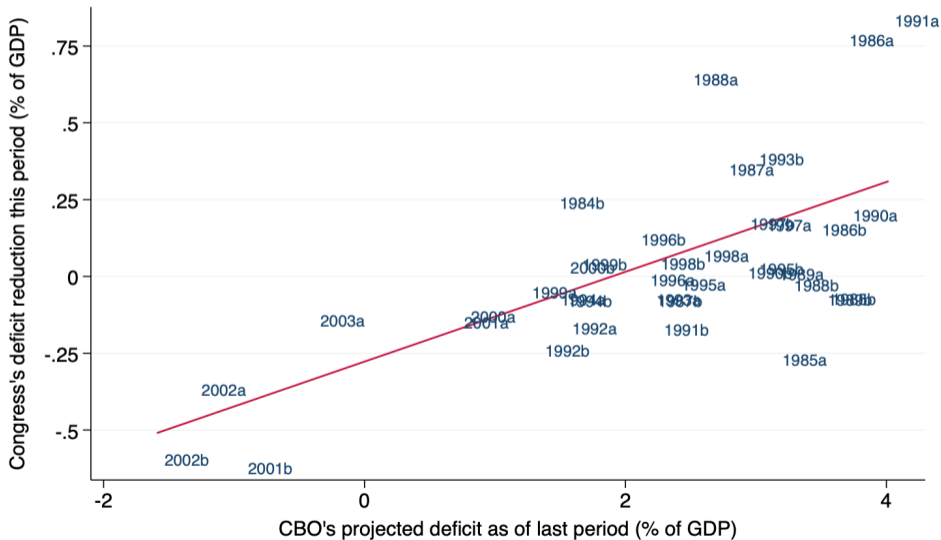
Table 3-1.

## Changes in CBO's Baseline Projections of the Deficit Since February 2024

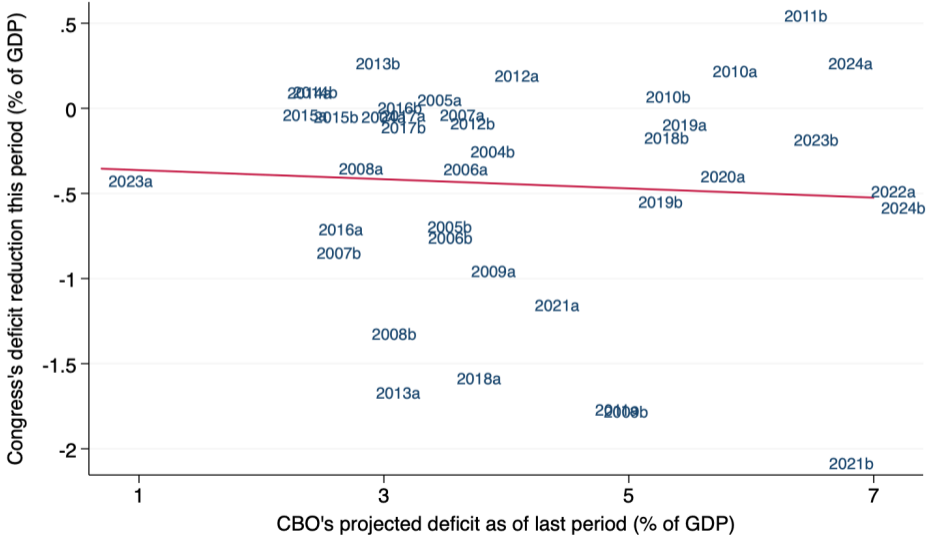
Billions of dollars

|   | 2024                       | 2025             | 2026              | 2027              | 2028              | 2029              | 2030              | 2031              | 2032              | 2033              | 2034              | Total             |                     |
|---|----------------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------|
|   |                            |                  |                   |                   |                   |                   |                   |                   |                   |                   |                   | 2025–2029         | 2025–2034           |
| Deficit in CBO's February 2024 baseline <sup>a</sup>                    | 1,507                      | 1,772            | 1,692             | 1,640             | 1,844             | 1,723             | 1,917             | 2,054             | 2,238             | 2,556             | 2,579             | 8,672             | 20,016              |
|   | <b>Legislative changes</b> |                  |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                     |
| <b>Changes in revenues</b>  | <b>-1</b>                  | <b>2</b>         | <b>-4</b>         | <b>-5</b>         | <b>-5</b>         | <b>-6</b>         | <b>-6</b>         | <b>-6</b>         | <b>-2</b>         | <b>-1</b>         | <b>-1</b>         | <b>-17</b>        | <b>-32</b>          |
| Changes in outlays  |                            |                  |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                     |
| Discretionary   |                            |                  |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                     |
| Defense   |                            |                  |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                     |
| Base  | 21                         | 24               | 24                | 25                | 25                | 25                | 26                | 27                | 27                | 28                | 28                | 124               | 260                 |
| Nonbase   | 10                         | 34               | 48                | 59                | 66                | 69                | 72                | 74                | 75                | 77                | 78                | 276               | 651                 |
| Subtotal, defense   | <u>32</u>                  | <u>58</u>        | <u>72</u>         | <u>84</u>         | <u>91</u>         | <u>95</u>         | <u>98</u>         | <u>100</u>        | <u>102</u>        | <u>105</u>        | <u>107</u>        | <u>400</u>        | <u>911</u>          |
| Nondefense  |                            |                  |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                     |
| Base  | 17                         | 7                | 9                 | 9                 | 8                 | 8                 | 8                 | 8                 | 9                 | 9                 | 8                 | 41                | 83                  |
| Nonbase   | 11                         | 19               | 24                | 28                | 29                | 30                | 31                | 32                | 33                | 33                | 34                | 131               | 294                 |
| Subtotal, nondefense  | <u>28</u>                  | <u>27</u>        | <u>33</u>         | <u>37</u>         | <u>37</u>         | <u>38</u>         | <u>39</u>         | <u>40</u>         | <u>41</u>         | <u>42</u>         | <u>43</u>         | <u>172</u>        | <u>377</u>          |
| Subtotal, discretionary   | <u>60</u>                  | <u>85</u>        | <u>105</u>        | <u>120</u>        | <u>128</u>        | <u>133</u>        | <u>137</u>        | <u>140</u>        | <u>144</u>        | <u>147</u>        | <u>149</u>        | <u>572</u>        | <u>1,289</u>        |
| Mandatory   | -3                         | -2               | 4                 | 2                 | -3                | -4                | -6                | -4                | -1                | -3                | *                 | -2                | -17                 |
| Debt service <sup>b</sup>   | 1                          | 5                | 8                 | 12                | 16                | 20                | 26                | 31                | 37                | 43                | 49                | 62                | 247                 |
| <b>Total change in outlays</b>  | <b><u>58</u></b>           | <b><u>88</u></b> | <b><u>118</u></b> | <b><u>135</u></b> | <b><u>141</u></b> | <b><u>149</u></b> | <b><u>156</u></b> | <b><u>167</u></b> | <b><u>179</u></b> | <b><u>187</u></b> | <b><u>199</u></b> | <b><u>631</u></b> | <b><u>1,519</u></b> |
| <b>Increase or decrease (-) in the deficit from legislative changes</b> | <b>59</b>                  | <b>86</b>        | <b>122</b>        | <b>139</b>        | <b>146</b>        | <b>155</b>        | <b>162</b>        | <b>173</b>        | <b>181</b>        | <b>188</b>        | <b>199</b>        | <b>648</b>        | <b>1,551</b>        |

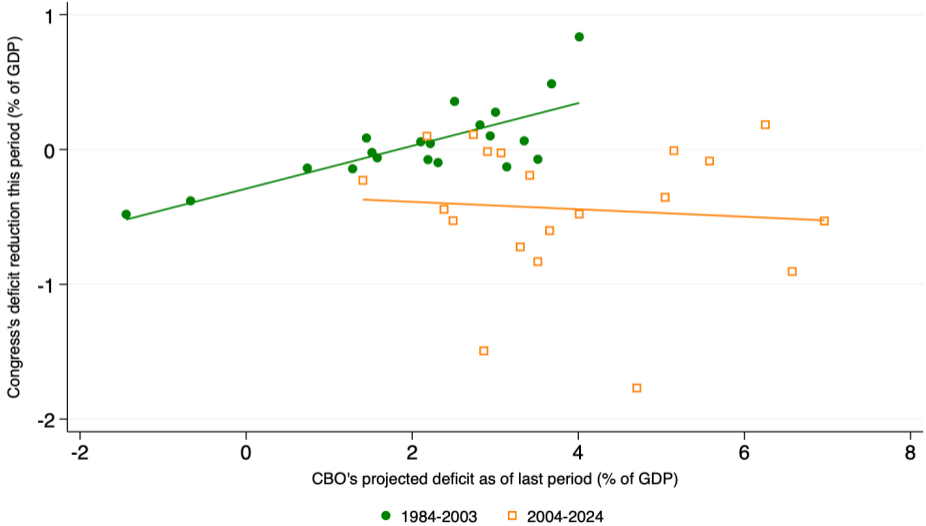
# 1984-2003 (Auerbach '03): Congress cut the deficit when proj. deficit rose



# 2004-2024: Congress no longer responds to projected deficits



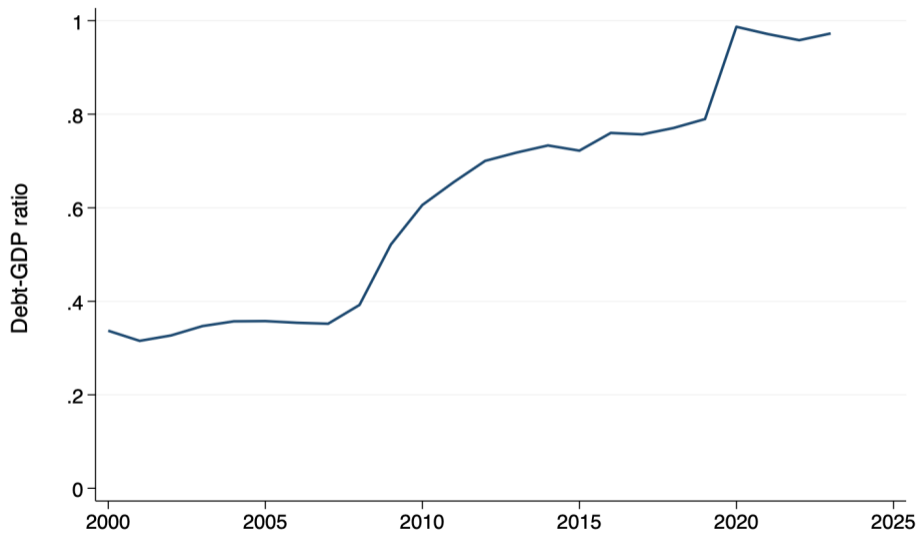
# Both time periods side-by-side: Stark change in Congressional behavior



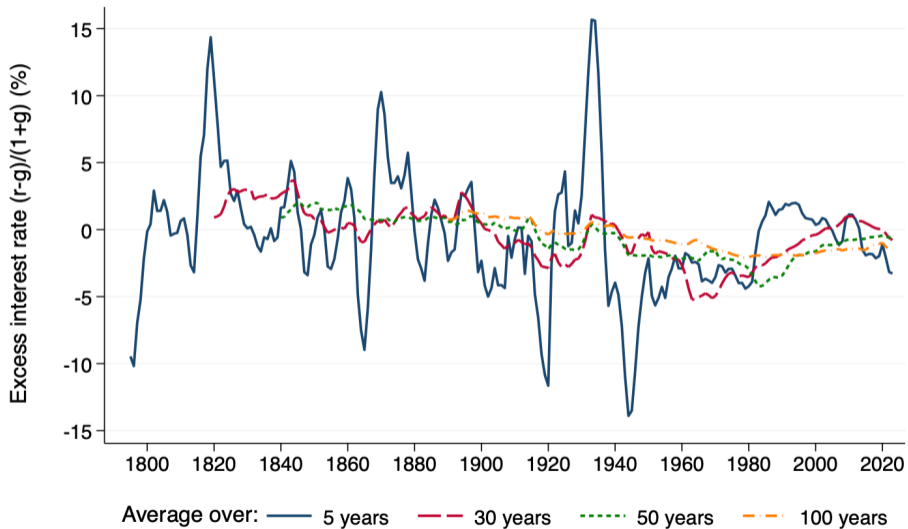
# How strong does fiscal feedback need to be?

- Any fiscal path is sustainable if future fiscal policy responds sufficiently to high deficits
- How strong does gradual fiscal feedback (akin to 1984-2003 behavior) need to be?
- What “wait-and-see” strategy (akin to 2004-2024 behavior) would work?

# Risk #1: Large transitory deficit shocks



## Risk #2: Persistent shocks to excess interest rate $(r-g)/(1+g)$ (Yagan '24)





# Model

- Debt-GDP ratio  $b_t$ :

$$b_t = (1 + \rho_t)b_{t-1} - s_t + e_{st}$$

- Excess interest rate  $\rho_t$ :

$$\rho_t = \beta_0 + \beta_1\rho_{t-1} + \beta_2b_{t-1} + e_{ut}$$

- Primary surplus  $s_t$  under deficit-based fiscal feedback:

$$s_t = s_{t-1} + c[\rho_t b_{t-1} - s_{t-1}]$$

- Primary surplus  $s_t$  under debt-based fiscal feedback:

$$s_t = a_s + d[b_{t-1} - a_b]$$

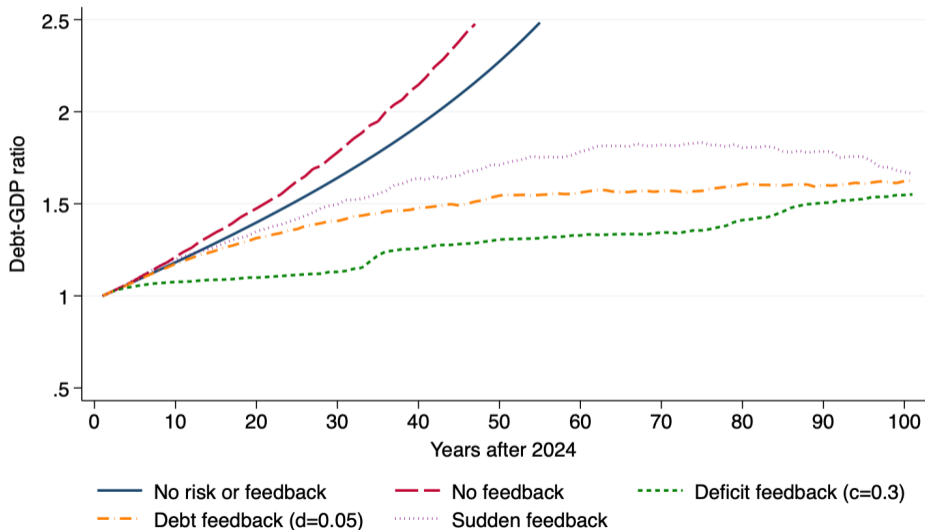
## Parameter values and descriptions

| Parameter             | Value  | Description   |
|-----------------------|--------|---|
| $\beta_0$             | -.0061 | Intercept in equation for $\rho$                    |
| $\beta_1$             | 0.576  | AR(1) estimate in equation for $\rho$               |
| $\beta_2$             | 0.004  | Debt sensitivity of $\rho$                          |
| $s_u$                 | 0.023  | Standard deviation of error in equation for $\rho$  |
| $a_b$                 | 1      | Government debt target in debt fiscal feedback rule |
| $a_s$                 | -0.025 | Underlying primary surplus-GDP ratio                |
| $\rho_0$ and $\rho_1$ | -0.005 | Initial value of $\rho$                             |
| $b_0$                 | 1      | Initial value of debt-GDP ratio                     |
| $\lambda$             | 2      | Expected Poisson shock frequency per 100 years      |
| $K_s$                 | 0.25   | Size of Poisson shock                               |
| $\theta$              | 0, 1   | "Stickiness" of fiscal feedback                     |
| $c$                   | 0.3    | Degree of surplus fiscal feedback                   |
| $d$                   | 0.05   | Degree of debt fiscal feedback                      |
| $T$                   | 30     | Minimum number of years between sudden feedbacks    |

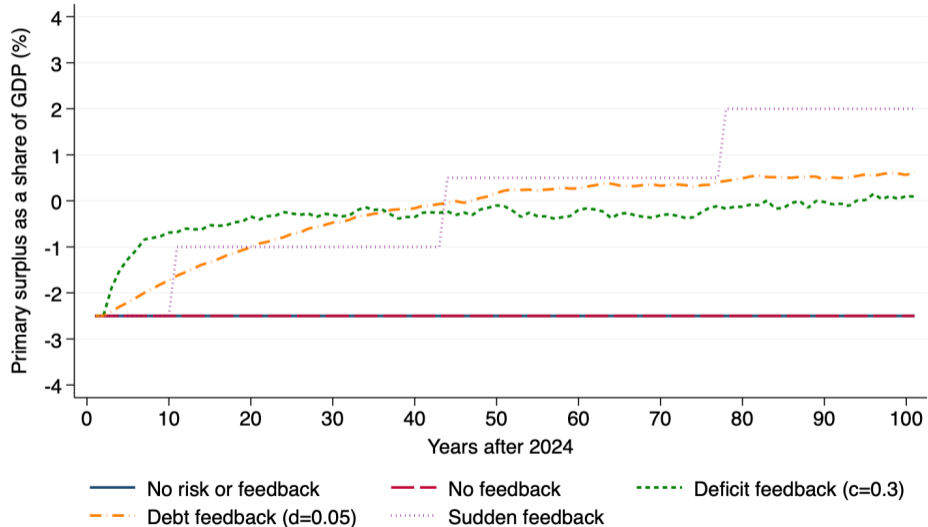
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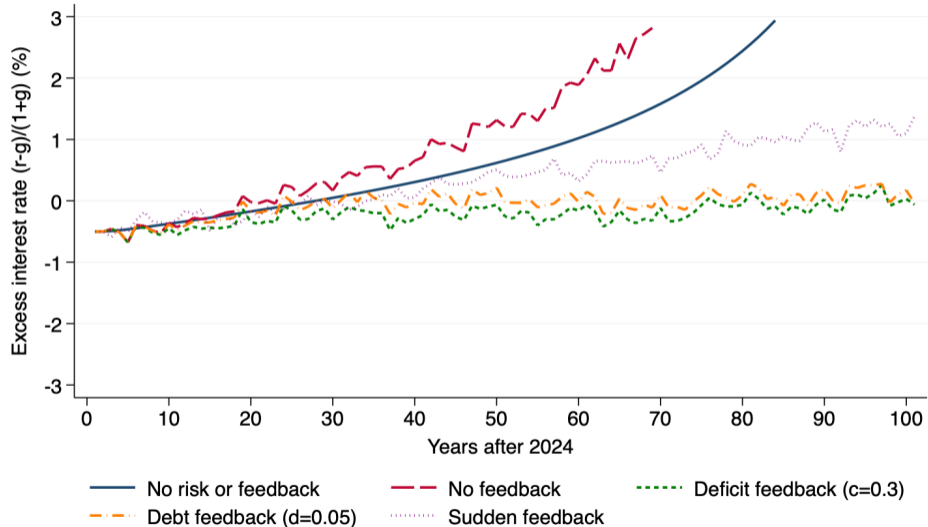
# Median fiscal paths under risk: Debt-GDP ratio



# Median fiscal paths under risk: Primary surplus



# Median fiscal paths under risk: Excess interest rate



# How strong does fiscal feedback need to be?

## a) Certainty

| Success defined as year-100 debt less than | Deficit feedback (1) | Debt feedback (2) | Sudden feedback (3) |
|--|----------------------|-------------------|---------------------|
| 150% of GDP                                | 0.05                 | 0.05              | 38                  |
| 200% of GDP                                | 0.03                 | 0.03              | 51                  |
| 250% of GDP                                | 0.02                 | 0.02              | 71                  |
| 500% of GDP                                | 0.01                 | 0.01              | 100                 |

## b) Risk

| Success defined as at least 95% of simulations with year-100 debt less than | Deficit feedback (1) | Debt feedback (2) | Sudden feedback (3) |
|---|----------------------|-------------------|---------------------|
| 150% of GDP   | NA                   | 0.15              | 9                   |
| 200% of GDP   | NA                   | 0.10              | 10                  |
| 250% of GDP   | 0.15                 | 0.05              | 11                  |
| 500% of GDP   | 0.05                 | 0.05              | 13                  |

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# Recent debt-ratio path under counterfactual fiscal feedback



# What does feedback imply for ten-year policy?

## As a Percentage of Gross Domestic Product

|                           | 2025  | 2026  | 2027  | 2028  | 2029  | 2030  | 2031  | 2032  | 2033  | 2034  | Average       |               |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|---------------|
|                           |       |       |       |       |       |       |       |       |       |       | 2025–<br>2029 | 2025–<br>2034 |
| <b>A. Primary surplus</b> |       |       |       |       |       |       |       |       |       |       |               |               |
| <b>CBO baseline</b>       | -3.1  | -2.6  | -2.1  | -2.4  | -2.2  | -2.6  | -2.5  | -2.6  | -3.1  | -2.8  | -2.5          | -2.6          |
| Deficit feedback (c=0.02) | -3.1  | -2.5  | -2.0  | -2.3  | -2.0  | -2.3  | -2.2  | -2.3  | -2.7  | -2.4  | -2.4          | -2.4          |
| Deficit feedback (c=0.15) | -2.7  | -1.9  | -1.3  | -1.4  | -1.0  | -1.3  | -1.1  | -1.1  | -1.4  | -0.9  | -1.7          | -1.4          |
| Debt feedback (d=0.02)    | -3.1  | -2.5  | -2.0  | -2.3  | -2.0  | -2.3  | -2.2  | -2.3  | -2.7  | -2.4  | -2.3          | -2.4          |
| Debt feedback (d=0.05)    | -3.0  | -2.3  | -1.8  | -2.0  | -1.7  | -2.0  | -1.8  | -1.9  | -2.3  | -1.9  | -2.2          | -2.1          |
| Sudden feedback           | -3.1  | -2.6  | -2.1  | -2.4  | -2.2  | -2.6  | -2.5  | -2.6  | -3.1  | -2.8  | -2.5          | -2.6          |
| <b>B. Debt</b>            |       |       |       |       |       |       |       |       |       |       |               |               |
| <b>CBO baseline</b>       | 101.6 | 104.1 | 106.2 | 108.6 | 110.5 | 112.7 | 114.8 | 117.1 | 119.9 | 122.4 |               |               |
| Deficit feedback (c=0.02) | 101.6 | 103.9 | 105.9 | 108.2 | 109.9 | 111.9 | 113.7 | 115.7 | 118.1 | 120.2 |               |               |
| Deficit feedback (c=0.15) | 101.2 | 103.1 | 104.4 | 105.8 | 106.6 | 107.5 | 108.2 | 109.0 | 110.0 | 110.7 |               |               |
| Debt feedback (d=0.02)    | 101.6 | 104.0 | 105.9 | 108.2 | 109.9 | 111.9 | 113.7 | 115.6 | 118.0 | 120.1 |               |               |
| Debt feedback (d=0.05)    | 101.5 | 103.8 | 105.6 | 107.6 | 109.0 | 110.6 | 112.0 | 113.6 | 115.6 | 117.2 |               |               |
| Sudden feedback           | 101.6 | 104.1 | 106.2 | 108.6 | 110.5 | 112.7 | 114.8 | 117.1 | 119.9 | 122.4 |               |               |

# What does feedback imply for ten-year policy?

## As a Percentage of Gross Domestic Product

|                                  | 2025  | 2026  | 2027  | 2028  | 2029  | 2030  | 2031  | 2032  | 2033  | 2034         | Average       |               |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|---------------|---------------|
|                                  |       |       |       |       |       |       |       |       |       |              | 2025–<br>2029 | 2025–<br>2034 |
| <b>A. Primary surplus</b>        |       |       |       |       |       |       |       |       |       |              |               |               |
| <b>CBO baseline</b>              | -3.1  | -2.6  | -2.1  | -2.4  | -2.2  | -2.6  | -2.5  | -2.6  | -3.1  | -2.8         | -2.5          | <b>-2.6</b>   |
| Deficit feedback (c=0.02)        | -3.1  | -2.5  | -2.0  | -2.3  | -2.0  | -2.3  | -2.2  | -2.3  | -2.7  | -2.4         | -2.4          | -2.4          |
| <b>Deficit feedback (c=0.15)</b> | -2.7  | -1.9  | -1.3  | -1.4  | -1.0  | -1.3  | -1.1  | -1.1  | -1.4  | -0.9         | -1.7          | <b>-1.4</b>   |
| Debt feedback (d=0.02)           | -3.1  | -2.5  | -2.0  | -2.3  | -2.0  | -2.3  | -2.2  | -2.3  | -2.7  | -2.4         | -2.3          | -2.4          |
| <b>Debt feedback (d=0.05)</b>    | -3.0  | -2.3  | -1.8  | -2.0  | -1.7  | -2.0  | -1.8  | -1.9  | -2.3  | -1.9         | -2.2          | <b>-2.1</b>   |
| Sudden feedback                  | -3.1  | -2.6  | -2.1  | -2.4  | -2.2  | -2.6  | -2.5  | -2.6  | -3.1  | -2.8         | -2.5          | -2.6          |
| <b>B. Debt</b>                   |       |       |       |       |       |       |       |       |       |              |               |               |
| <b>CBO baseline</b>              | 101.6 | 104.1 | 106.2 | 108.6 | 110.5 | 112.7 | 114.8 | 117.1 | 119.9 | <b>122.4</b> |               |               |
| Deficit feedback (c=0.02)        | 101.6 | 103.9 | 105.9 | 108.2 | 109.9 | 111.9 | 113.7 | 115.7 | 118.1 | 120.2        |               |               |
| <b>Deficit feedback (c=0.15)</b> | 101.2 | 103.1 | 104.4 | 105.8 | 106.6 | 107.5 | 108.2 | 109.0 | 110.0 | <b>110.7</b> |               |               |
| Debt feedback (d=0.02)           | 101.6 | 104.0 | 105.9 | 108.2 | 109.9 | 111.9 | 113.7 | 115.6 | 118.0 | 120.1        |               |               |
| <b>Debt feedback (d=0.05)</b>    | 101.5 | 103.8 | 105.6 | 107.6 | 109.0 | 110.6 | 112.0 | 113.6 | 115.6 | <b>117.2</b> |               |               |
| Sudden feedback                  | 101.6 | 104.1 | 106.2 | 108.6 | 110.5 | 112.7 | 114.8 | 117.1 | 119.9 | 122.4        |               |               |

# Conclusion

- Congress has stopped cutting the deficit when projected deficits rise
- Gradual feedback half as strong as during 1984-2003 would meet our stability criterion
- A “wait-and-see” approach sometimes allows little waiting