

# Defense Spending Cuts

## The Impact on Economic Activity and Jobs

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# Outline

## 1 Motivation

- The Basic Problem That We Studied
  - Scheduled Reductions to Defense Spending
  - The Timeline
  - Composition of Deficit Reduction
  - Scope of Study/Research Questions
- Related Literature

## 2 Our Results and Contributions

- Modeling Work
- Key Assumptions
- Macro/Industry Impacts
- State Industry Impacts
- Induced Impacts
- Comparisons

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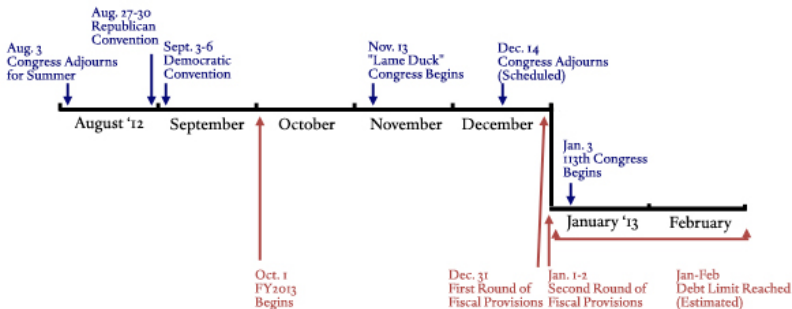
# Current Policy: Reductions to Defense Spending

## Budget Control Act of 2011

- **BCA-1** Caps on total discretionary federal spending (Some exceptions, e.g. operations in Iraq and Afghanistan)
  - \$917 billion of cuts in discretionary spending over 10 years, beginning fiscal 2012
- **BCA-2** Automatic cuts (“sequestration”) of \$1.2 trillion over 10 years
  - ① By Nov. 21, 2011, Joint Committee of Congress to schedule at least \$1.2 trillion of additional deficit reduction.
  - ② The “Super Committee” was unable to agree on a deficit reduction package.
  - ③ As a result, automatic across-the-board reductions start January 1, 2013, split equally between defense and nondefense spending.

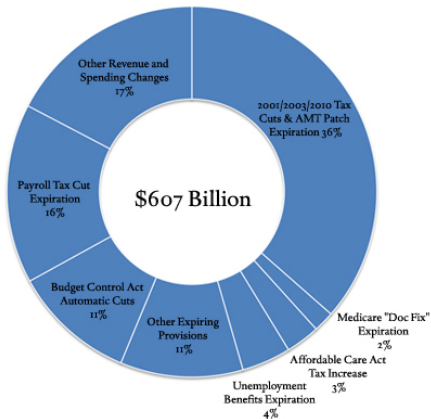
# The Timeline

## Timeline: Marching Toward the Fiscal Cliff



# Composition of Deficit Reduction

Federal Deficit Reduction in FY2013



Source: Congressional Budget Office | Graphic: Hagit Bachrach

## Scope of Study/Research Questions

- What will be the macroeconomic impacts?
- Which national industries will be lose the most employees and production?
- Which state will suffer the greatest employment losses?
- How long will the effects last?

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## Related Research at Inforum

- Werling and Horst. (2012). Defense Spending Cuts: The Impact on Economic Activity and Jobs. National Association of Manufacturers.
- Werling and Horst. (forthcoming) Sudden Cliff or Steep Slope: Pending Fiscal Policies Will Threaten Jobs and Economic Growth Analysis Using the LIFT Model.

## Other Literature

- Congressional Budget Office
  - (January 2012) *Budget Outlook*
  - (August 2012) *An Update to the Budget and Economic Outlook: Fiscal Years 2012 to 2022*
- The Committee for a Responsible Budget
  - (Updated 7/16/2012) *Between a Mountain of Debt and a Fiscal Cliff: Finding a Smart Path Forward.*

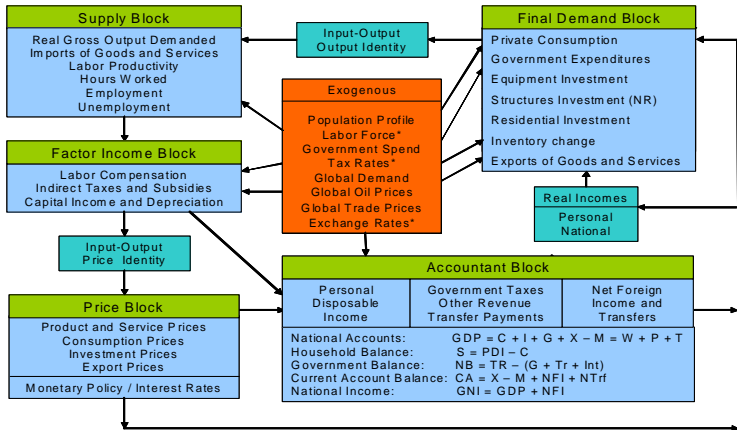
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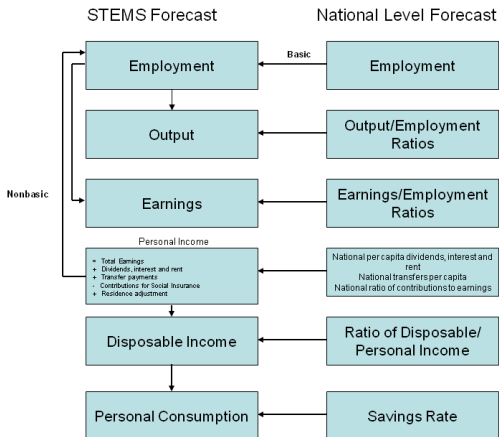
# Modeling Work

- Macroeconomic and National Industries (LIFT)
- State Industries (STEMS)
- Primary/Secondary/Tertiary Impacts (STATUS)

# LIFT – Long-run Forecasting Tool



# STEMS – State Employment Model



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# Key Assumptions: CBO

**Table 1: U.S. Defense Outlays, Fiscal Year Basis**

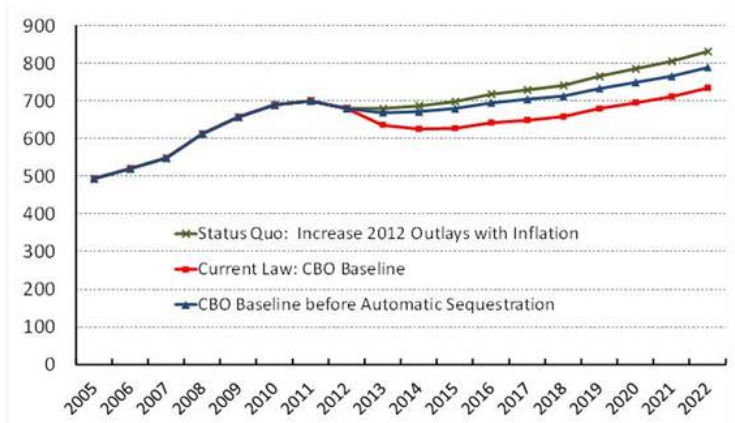
Billions of dollars

	Budget												Projection		Total
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022	2022
Status Quo: Increase 2012 Outlays with Inflation	689	700	680	679	687	698	718	729	741	765	785	805	831	8118	
CBO Baseline before Automatic Sequestration				669	671	679	695	704	712	733	749	765	789	7166	
Effect of BCA1 caps compared to Status Quo				10	16	19	23	25	29	32	36	40	42	272	
Current Law: CBO Baseline				636	625	627	642	649	658	679	695	711	734	6656	
Effect of BCA2 sequestration				33	46	52	53	55	54	54	54	54	55	510	
Effects of BCA1 & BCA2 compared to Status Quo				43	62	71	76	80	83	86	90	94	97	782	

Source: Congressional Budget Office, Budget Outlook, January 2012. Table 3.5, pages 74-75.



# U.S. Defense Outlays, Fiscal Year Basis (Billions of dollars)



## Key Assumptions: Lift (Nominal)

**Table 2: U.S. Defense Outlays, Calendar Year Basis -- Basic input to LIFT Model**  
Billions of dollars

	Actual		Projection										Total 2012-	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022
Status Quo: Increase 2012 Outlays with Inflat	692	695	680	681	690	703	721	732	747	770	790	812	835	8160
CBO Baseline before Automatic Sequestration			677	670	673	683	697	706	717	737	753	771	793	7878
Effect of BCA1 caps compared to Status Quo			3	12	17	20	24	26	30	33	37	41	42	282
Current Law: CBO Baseline			669	633	626	631	644	651	663	683	699	717	738	7354
Effect of BCA2 sequestration			8	36	48	52	54	55	54	54	54	54	55	524
Effects of BCA1 & BCA2 compared to Status Quo			11	48	64	72	77	81	84	87	91	95	97	806

# Key Assumptions: Lift (Real)

**Table 3: U.S. Real Defense Outlays, Calendar Year Basis**

Billions of 2011 dollars

	Actual		Projection										Total	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2022
Status Quo: Increase 2012 Outlays with Inflation	708	695	667	657	653	653	656	654	654	660	664	667	672	7258
CBO Baseline before Automatic Sequestration			665	646	637	634	635	631	628	632	633	634	639	7013
Effect of BCA1 caps compared to Status Quo			2	11	16	19	21	23	26	28	31	33	34	245
Current Law: CBO Baseline			657	611	592	586	586	582	581	586	587	589	594	6551
Effect of BCA2 sequestration			8	35	45	49	49	49	47	46	45	45	44	462
Effects of BCA1 & BCA2 compared to Status Quo			11	46	61	67	70	72	73	75	76	78	78	707

\* Deflated using baseline GDP deflator.

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# Macro/Industry Impacts

Line 1: BCA-1 Expenditure Caps Only (BCA-1 caps, no BCA-2 sequestration)

Line 2: BCA-2 Sequestration with BCA-1 Caps (CBO current law projection)

**Alternatives are shown in deviations from status quo baseline, units as noted.**

	2012	2013	2014	2015	2016	2018	2020	2022
Real federal defense expenditures (percent)	-0.3 -1.3	-1.4 -5.9	-2.1 -8.0	-2.5 -9.0	-2.9 -9.5	-3.6 -10.1	-4.2 -10.5	-4.6 -10.6
Real Gross Domestic Product (percent)	0.0 -0.1	-0.2 -0.6	-0.2 -0.8	-0.2 -0.7	-0.2 -0.6	-0.1 -0.3	-0.1 -0.2	-0.1 -0.2
<b>Employment</b>								
Private Sector Employment (thousands of jobs)	-43 -142	-210 -755	-261 -1010	-236 -878	-188 -611	-80 -148	-59 -15	-18 74
Manufacturing Employment (thousands of jobs)	-4 -14	-20 -75	-34 -130	-33 -130	-28 -99	-14 -39	-12 -24	-11 -18
Govt Defense Employment (thousands of jobs)	-8 -35	-37 -152	-53 -201	-61 -222	-70 -229	-84 -236	-98 -241	-105 -243
Total Employment (military + civilian) (thousands of jobs)	-51 -177	-247 -907	-314 -1211	-297 -1100	-258 -841	-164 -385	-157 -257	-123 -169

# National Deficit

Line 1: CBO Status Quo Baseline (Defense expenditures grow with inflation)

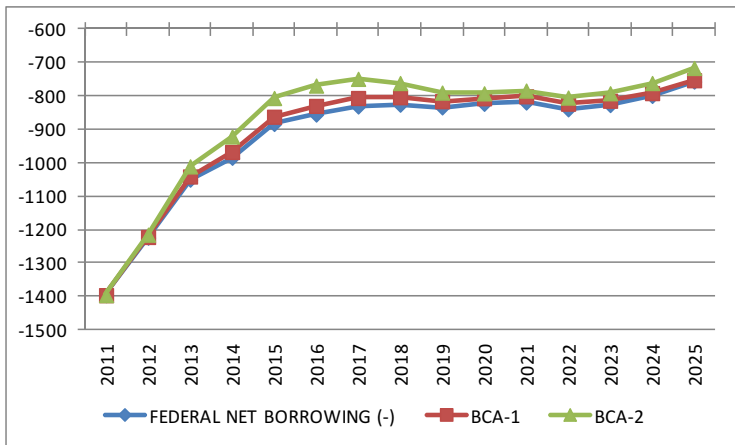
Line 2: BCA-1 Expenditure Caps Only (BCA-1 caps, no BCA-2 sequestration)

Line 3: BCA-2 Sequestration with BCA-1 Caps (CBO current law projection)

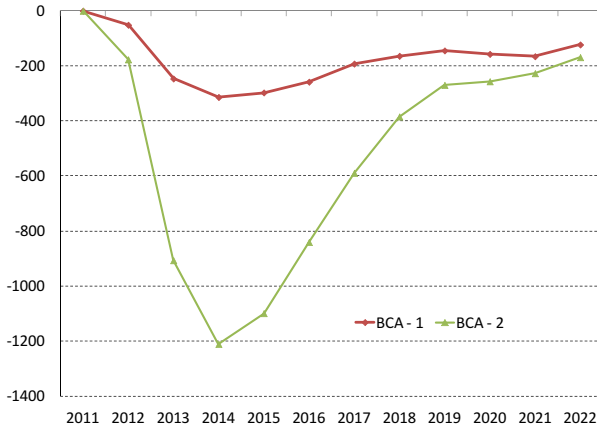
Alternatives are shown in percentage deviations from base, unless otherwise noted.

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
<b>FEDERAL NET BORROWING (-)</b>	-1396	-1224	-1050	-985	-884	-856	-832	-826	-834	-824	-820	-840
(\$ billions)		2	9	17	22	26	25	22	19	17	19	17
		9	40	64	78	87	82	65	44	31	36	35
as percent of GDP	-9.2	-7.8	-6.4	-5.7	-4.9	-4.5	-4.1	-3.9	-3.8	-3.6	-3.4	-3.3
		0.01	0.05	0.09	0.11	0.13	0.12	0.10	0.08	0.06	0.07	0.06
		0.05	0.21	0.33	0.39	0.43	0.39	0.29	0.18	0.12	0.13	0.12
<b>CURRENT ACCOUNT DEFICIT (-)</b>	-467	-541	-592	-583	-598	-643	-713	-756	-756	-752	-763	-769
		1	6	10	10	7	4	4	5	8	10	11
		4	23	35	34	18	7	4	8	18	29	38
as percent of GDP	-3.1	-3.4	-3.6	-3.4	-3.3	-3.4	-3.5	-3.6	-3.4	-3.3	-3.2	-3.1
		0.01	0.03	0.05	0.05	0.03	0.01	0.01	0.02	0.03	0.04	0.04
		0.02	0.12	0.18	0.16	0.07	0.01	0.00	0.02	0.06	0.10	0.13

# Federal Net Borrowing



# Change in Total Employment Relative to the Status Quo Baseline for Each Scenario (Thousands of jobs)





# Industry Employment Impacts

Line 1: BCA-1 Expenditure Caps Only (BCA-1 caps, no BCA-2 sequestration)

Line 2: BCA-2 Sequestration with BCA-1 Caps (CBO current law projection)

Alternatives are shown in percentage deviations from status quo baseline, units as noted.

	2012	2013	2014	2015	2016	2018	2020	2022
Agriculture, Mining, and Construction	0.0	-0.2	-0.3	-0.2	-0.1	0.1	0.1	0.1
Construction	-0.2	-0.9	-1.1	-0.9	-0.4	0.3	0.4	0.2
Manufacturing	-0.1	-0.3	-0.4	-0.3	-0.2	0.1	0.1	0.1
Non-durable Manufacturing	-0.3	-1.2	-1.5	-1.2	-0.6	0.4	0.4	0.2
Durable Manufacturing	0.0	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1
Durables Materials and Products	-0.1	-0.6	-1.0	-1.0	-0.8	-0.3	-0.2	-0.1
Non-Electrical Machinery	0.0	-0.1	-0.2	-0.2	-0.1	0.0	0.0	0.0
Electrical Machinery	-0.1	-0.5	-0.7	-0.7	-0.5	-0.1	0.0	0.1
Transportation Equipment	0.0	-0.2	-0.3	-0.3	-0.3	-0.1	-0.1	-0.1
Aerospace	-0.1	-0.7	-1.2	-1.2	-1.0	-0.4	-0.3	-0.3
Ships & Boats	0.0	-0.1	-0.2	-0.2	-0.2	0.0	0.0	0.0
Instruments and Miscellaneous	-0.1	-0.5	-0.9	-0.9	-0.6	0.0	0.0	0.0
Search & Navigation Equipment	0.0	0.0	-0.2	-0.2	-0.2	0.0	0.0	0.0
	0.0	-0.2	-0.8	-1.0	-0.7	0.0	0.0	0.0
	-0.1	-0.3	-0.4	-0.4	-0.5	-0.3	-0.3	-0.3
	-0.2	-1.0	-1.6	-1.7	-1.5	-0.9	-0.7	-0.6
	-0.1	-0.3	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4
	-0.3	-1.1	-1.8	-1.8	-1.6	-1.0	-0.9	-0.8
	-0.1	-0.5	-0.8	-0.9	-1.0	-1.0	-1.0	-1.0
	-0.5	-2.0	-3.1	-3.4	-3.3	-3.0	-2.6	-2.3
	-0.1	-0.5	-1.0	-0.9	-0.8	-0.8	-0.8	-0.8
	-0.5	-1.4	-3.3	-3.2	-2.8	-2.2	-1.9	-1.7
	-0.1	-0.3	-0.6	-0.6	-0.6	-0.6	-0.7	-0.8
	-0.3	-1.4	-2.1	-2.3	-2.2	-1.8	-1.8	-1.8
	-0.3	-1.4	-2.2	-2.5	-2.8	-3.2	-3.6	-3.8
	-1.3	-5.9	-8.4	-9.2	-9.3	-8.9	-8.8	-8.6

# Industry Employment Impacts Continued

Line 1: BCA-1 Expenditure Caps Only (BCA-1 caps, no BCA-2 sequestration)

Line 2: BCA-2 Sequestration with BCA-1 Caps (CBO current law projection)

Alternatives are shown in percentage deviations from status quo baseline, units as noted.

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2018</u>	<u>2020</u>	<u>2022</u>
Services	0.0	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0.0
	-0.1	-0.6	-0.7	-0.6	-0.4	-0.1	0.0	0.1
Transportation, Communication, Utilities	0.0	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
	-0.1	-0.6	-0.8	-0.8	-0.6	-0.3	-0.2	-0.1
Trucking, hwy pssngr transit	0.0	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
	-0.1	-0.7	-0.9	-0.8	-0.6	-0.3	-0.2	-0.1
Communications services	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1
	-0.1	-0.3	-0.6	-0.8	-0.8	-0.4	-0.2	-0.1
Trade: Retail, Wholesale, Restaurants	0.0	-0.2	-0.2	-0.1	-0.1	0.0	0.0	0.0
	-0.1	-0.6	-0.7	-0.5	-0.3	0.0	0.1	0.1
Wholesale Trade	0.0	-0.1	-0.2	-0.1	-0.1	0.0	0.0	0.0
	-0.1	-0.4	-0.6	-0.6	-0.4	0.0	0.0	0.0
Retail Trade	0.0	-0.2	-0.2	-0.2	-0.1	0.0	0.0	0.1
	-0.1	-0.8	-0.8	-0.6	-0.3	0.1	0.2	0.3
Finance, Insurance, Real Estate	0.0	-0.1	-0.2	-0.1	-0.1	0.0	0.0	0.0
	-0.1	-0.5	-0.6	-0.5	-0.3	-0.1	0.0	0.1
Health	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0
	-0.1	-0.3	-0.5	-0.4	-0.3	-0.2	0.0	0.2
Other Services	0.0	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
	-0.1	-0.7	-0.9	-0.8	-0.6	-0.2	-0.1	-0.1
Professional services	0.0	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2
	-0.2	-0.8	-1.1	-1.0	-0.9	-0.5	-0.5	-0.4

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# State Industry Employment Impacts

**Line 1: NAM - BCA 1 - difference from base**

**Line 2: NAM - BCA 2 - difference from base**

**Alternatives are shown in deviations from base values.**

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2018</u>	<u>2020</u>	<u>2022</u>
California	-6.3	-30.6	-38.6	-35.9	-31.0	-19.1	-17.3	-12.2
	-21.5	-111.5	-148.4	-132.3	-99.9	-43.9	-25.3	-7.3
Virginia	-4.9	-23.5	-29.8	-28.3	-24.8	-16.8	-16.8	-13.5
	-17.2	-86.8	-114.9	-104.3	-80.1	-39.3	-28.7	-22.1
Texas	-4.6	-22.2	-28.2	-26.8	-23.3	-14.9	-14.5	-11.5
	-16.2	-81.9	-109.0	-99.1	-76.1	-35.1	-24.3	-18.2
Florida	-2.4	-11.5	-14.6	-13.9	-12.0	-7.5	-7.3	-5.9
	-8.4	-42.7	-56.6	-51.5	-39.3	-17.2	-11.8	-9.3
New York	-1.8	-8.8	-10.9	-10.1	-8.6	-4.9	-4.3	-2.7
	-6.2	-32.0	-42.1	-37.5	-27.9	-11.1	-5.8	-2.8
Maryland	-1.7	-8.1	-10.4	-10.0	-8.9	-6.0	-6.0	-5.0
	-6.0	-30.1	-40.2	-36.9	-28.8	-14.3	-10.4	-7.4
Georgia	-1.6	-7.8	-10.0	-9.7	-8.7	-6.2	-6.3	-5.4
	-5.8	-29.1	-38.7	-36.0	-28.6	-15.2	-11.7	-10.0
Illinois	-1.5	-7.4	-9.1	-8.4	-7.0	-3.8	-3.4	-2.1

# California Employment Impacts

Line 1: Base

Line 2: BCA 1 - difference from base

Line 3: BCA 2 - difference from base

Alternatives are shown in deviations from base values (thousands of jobs).

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2018</u>	<u>2020</u>	<u>2022</u>
<b>California</b>								
<b>Total Employment</b>	16414.6	16726.5	16927.1	17186.3	17526.5	18062.3	18425.8	18761.9
	-6.3	-30.6	-38.6	-35.9	-31.0	-19.1	-17.3	-12.2
	-21.5	-111.5	-148.4	-132.3	-99.9	-43.9	-25.3	-7.3
<b>Private Employment</b>	13784.9	14099.8	14299.6	14555.1	14887.6	15402.9	15740.3	16052.6
	-5.5	-26.9	-33.2	-29.6	-23.9	-10.5	-7.3	-1.5
	-18.0	-96.0	-127.9	-109.8	-76.6	-19.9	-0.8	17.4
<b>Manufacturing Employment</b>	1381.7	1372.2	1365.0	1364.5	1372.6	1385.8	1385.6	1392.8
	-0.5	-2.3	-3.9	-3.9	-3.5	-2.3	-2.2	-2.1
	-1.8	-9.0	-14.9	-15.2	-12.3	-6.5	-4.9	-4.1
<b>Federal Civilian Employment</b>	243.6	240.8	238.4	236.3	235.8	234.4	233.8	233.0
	-0.2	-1.1	-1.6	-1.9	-2.1	-2.5	-3.0	-3.2
	-1.1	-4.6	-6.1	-6.7	-7.0	-7.2	-7.3	-7.3
<b>Federal Military Employment</b>	166.6	165.3	164.0	163.2	162.7	160.9	160.7	160.6
	-0.6	-2.6	-3.8	-4.4	-5.0	-6.0	-7.0	-7.6
	-2.5	-10.9	-14.4	-15.8	-16.4	-16.9	-17.3	-17.4

# Virginia Employment Impacts

Line 1: Base

Line 2: BCA 1 - difference from base

Line 3: BCA 2 - difference from base

Alternatives are shown in deviations from base values (thousands of jobs).

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2018</u>	<u>2020</u>	<u>2022</u>
<b>Virginia</b>								
<b>Total Employment</b>	3991.6	4049.6	4096.2	4158.5	4243.1	4372.1	4460.7	4536.8
	-4.9	-23.5	-29.8	-28.3	-24.8	-16.8	-16.8	-13.5
	-17.2	-86.8	-114.9	-104.3	-80.1	-39.3	-28.7	-22.1
<b>Private Employment</b>	3180.4	3240.9	3289.2	3352.0	3435.3	3561.1	3644.0	3715.0
	-4.1	-19.7	-24.4	-22.0	-17.6	-8.2	-6.7	-2.8
	-13.6	-71.2	-94.3	-81.6	-56.7	-15.2	-4.1	2.7
<b>Manufacturing Employment</b>	218.7	218.4	218.0	218.7	220.9	225.5	227.0	228.7
	-0.2	-1.1	-2.0	-1.9	-1.6	-0.8	-0.7	-0.6
	-0.8	-4.2	-7.5	-7.2	-5.4	-2.3	-1.5	-1.0
<b>Federal Civilian Employment</b>	171.2	169.3	167.6	166.1	165.8	164.8	164.3	163.8
	-0.4	-1.8	-2.6	-3.0	-3.5	-4.1	-4.8	-5.2
	-1.7	-7.5	-10.0	-10.9	-11.3	-11.7	-11.9	-11.9
<b>Federal Military Employment</b>	123.0	122.0	121.0	120.4	120.1	118.7	118.6	118.5
	-0.4	-1.9	-2.8	-3.2	-3.7	-4.4	-5.2	-5.6
	-1.8	-8.0	-10.6	-11.7	-12.1	-12.5	-12.7	-12.8

# Outline

- 1 Motivation
  - The Basic Problem That We Studied
    - Scheduled Reductions to Defense Spending
    - The Timeline
    - Composition of Deficit Reduction
    - Scope of Study/Research Questions
  - Related Literature
- 2 Our Results and Contributions
  - Modeling Work
  - Key Assumptions
  - Macro/Industry Impacts
  - State Industry Impacts
  - **Induced Impacts**
  - Comparisons

# BCA-1 Induced Impacts

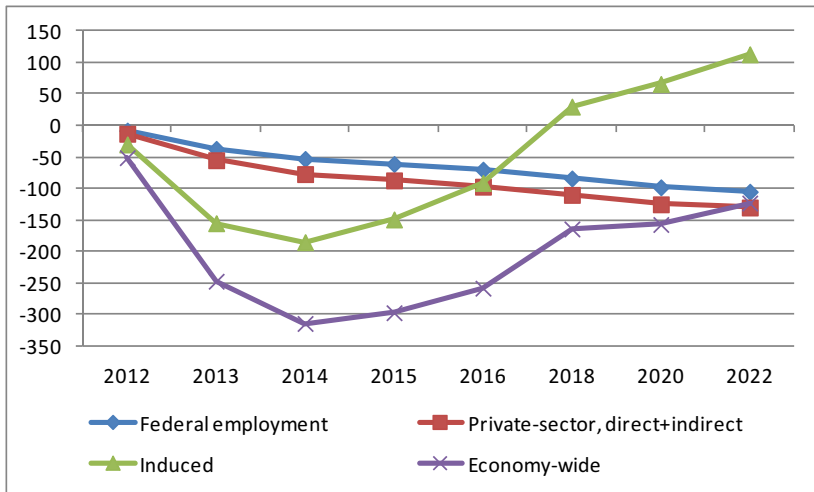
**Table 7: Decomposition of Employment Results among Federal, Direct, Indirect and Induced Changes**

(Thousands of jobs)

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2018</u>	<u>2020</u>	<u>2022</u>
<b>BCA-1</b>								
<b>Federal employment</b>								
Civilian	-3	-12	-17	-20	-23	-28	-32	-35
Military	-5	-25	-35	-41	-47	-56	-66	-71
<b>Total</b>	<b>-8</b>	<b>-37</b>	<b>-53</b>	<b>-61</b>	<b>-70</b>	<b>-84</b>	<b>-98</b>	<b>-105</b>
<b>Private-sector employment</b>								
Direct	-5	-22	-30	-35	-39	-44	-50	-52
Indirect	-8	-33	-46	-52	-58	-66	-75	-78
<b>Total</b>	<b>-13</b>	<b>-55</b>	<b>-77</b>	<b>-87</b>	<b>-97</b>	<b>-110</b>	<b>-125</b>	<b>-130</b>
<b>Induced</b>	<b>-30</b>	<b>-155</b>	<b>-185</b>	<b>-149</b>	<b>-91</b>	<b>30</b>	<b>66</b>	<b>113</b>
<b>Economy-wide</b>	<b>-51</b>	<b>-247</b>	<b>-314</b>	<b>-297</b>	<b>-258</b>	<b>-164</b>	<b>-157</b>	<b>-123</b>



# BCA-1 Induced Impacts



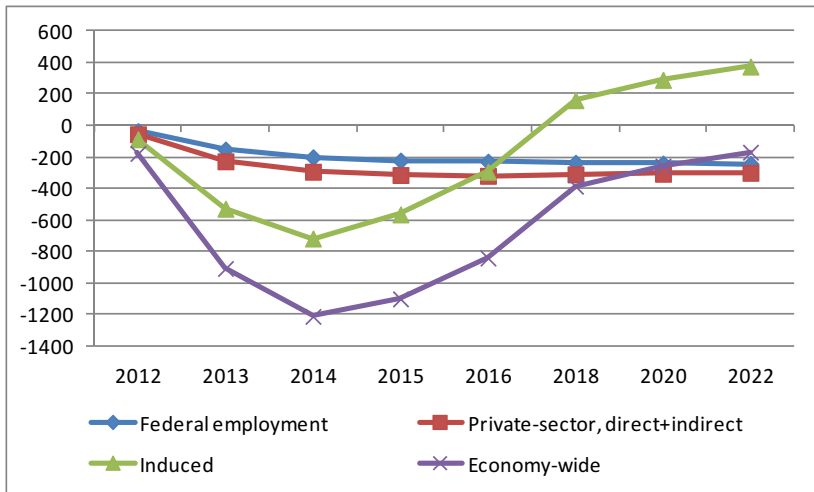
# BCA-2 Induced Impacts

**Table 7: Decomposition of Employment Results among Federal, Direct, Indirect and Induced Changes**

(Thousands of jobs)

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2018</u>	<u>2020</u>	<u>2022</u>
<b>BCA-2</b>								
<b>Federal employment</b>								
Civilian	-11	-50	-66	-73	-76	-78	-79	-80
Military	-23	-102	-135	-148	-154	-159	-162	-163
<b>Total</b>	-35	-152	-201	-222	-229	-236	-241	-243
<b>Private-sector, direct+indirect</b>								
Direct	-22	-91	-117	-125	-127	-124	-123	-120
Indirect	-33	-135	-176	-189	-191	-186	-183	-180
<b>Total</b>	-55	-227	-293	-314	-319	-310	-306	-300
<b>Induced</b>	-87	-528	-717	-564	-293	161	290	374
<b>Economy-wide</b>	-177	-907	-1211	-1100	-841	-385	-257	-169

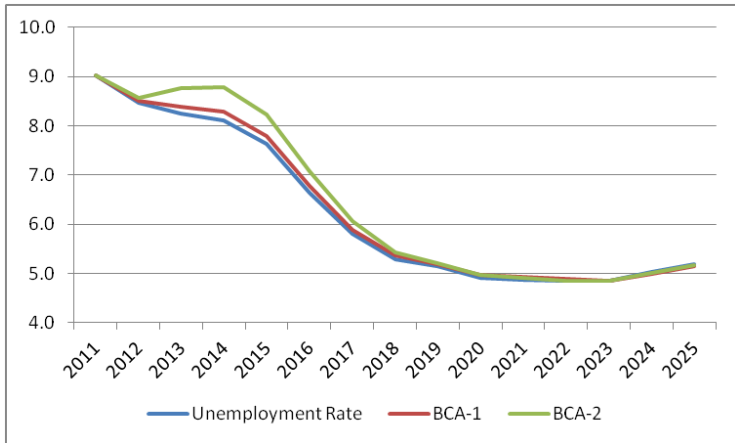
## BCA-2 Induced Impacts



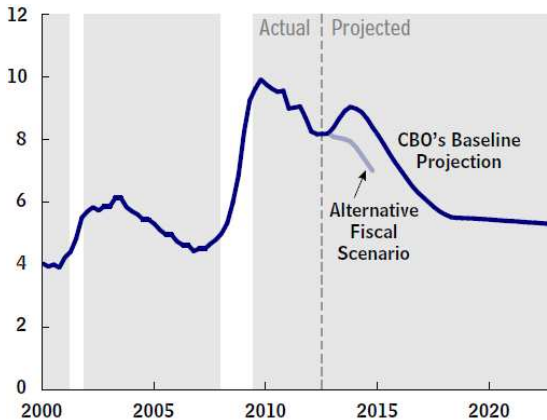
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# Unemployment Impacts



## Comparison: CBO Unemployment Impacts



Sources: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

# Summary

- For more, see published work on [www.Inforum.umd.edu](http://www.Inforum.umd.edu).

# For Further Reading I

 National Association of Manufacturers. (July 2012)  
*Defense Cuts Would Cost More Than 1 Million Jobs.*

 Jonathan Masters. (Updated August 1, 2012)  
*What Is the Fiscal Cliff?*