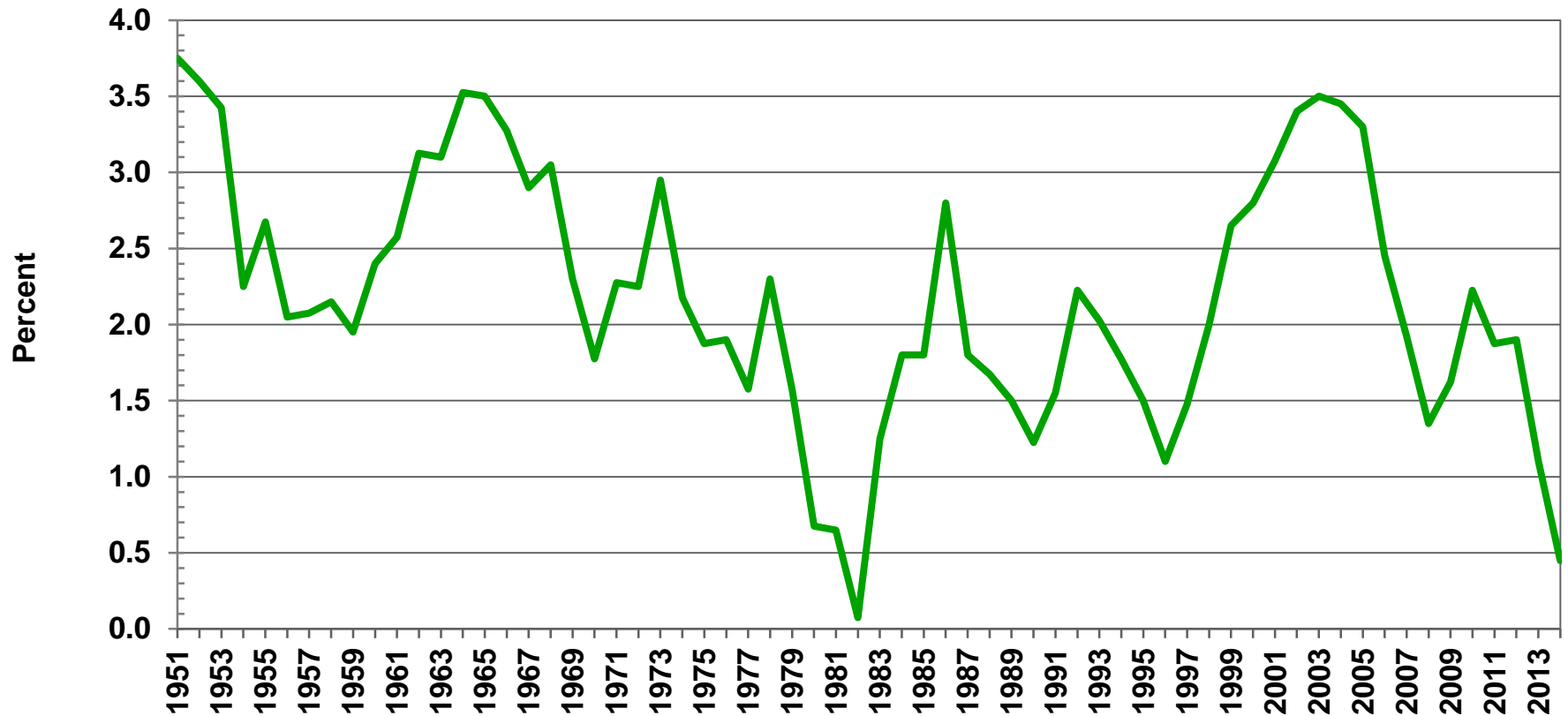
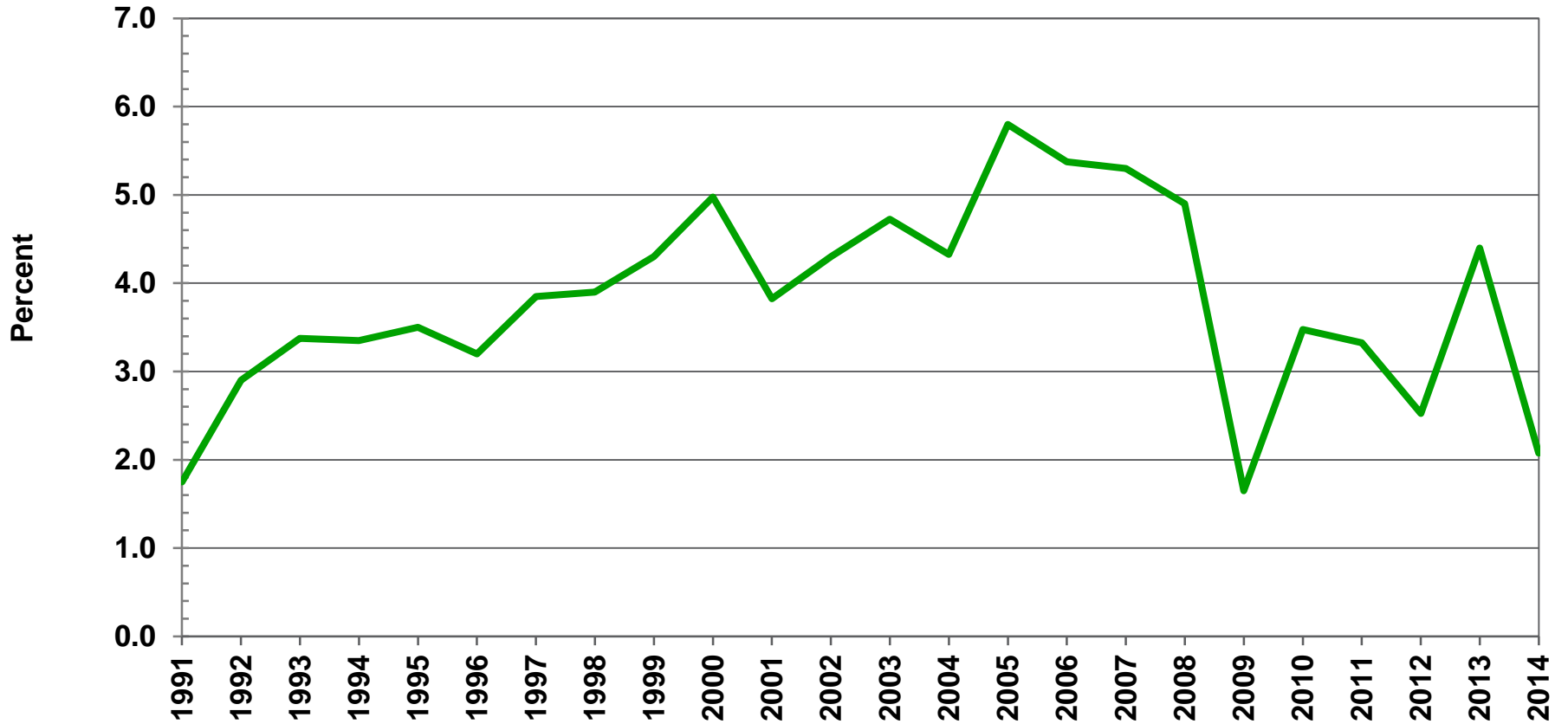


Figure 1 – U.S. Non-Farm Labor Productivity Growth, Four-Year Moving Average



Source(s): U.S. Bureau of Labor Statistics

Figure 2 – U.S. Manufacturing Labor Productivity Growth, Four-Year Moving Average



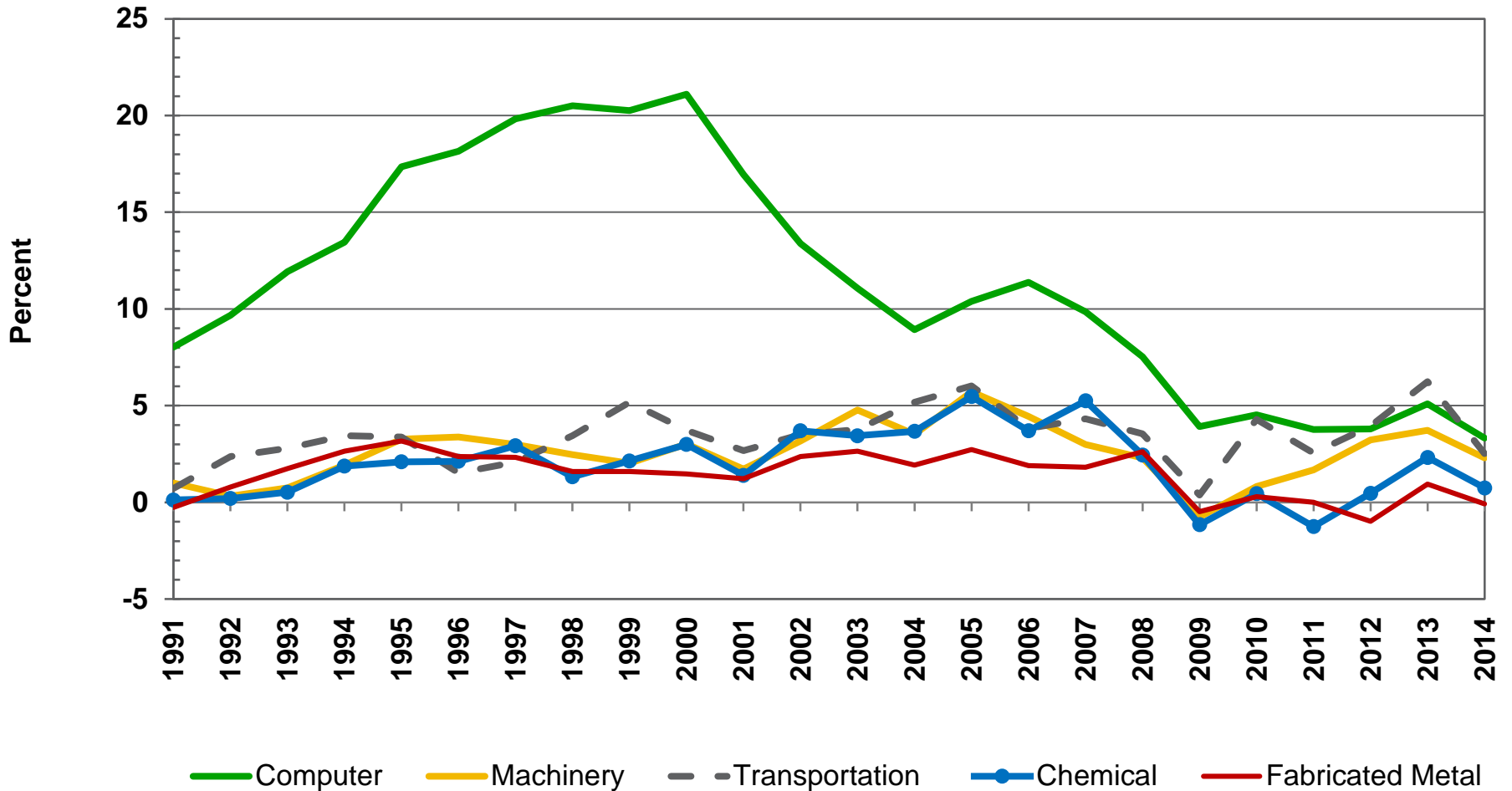
Source(s): U.S. Bureau of Labor Statistics

**Table 1 – Ranking by Four-Year Moving Average of Labor Productivity Growth**

<b>Subsector</b>	<b>1993</b>	<b>1999</b>	<b>2005</b>	<b>2014</b>
Food	16	18	15	13
Beverage and Tobacco Products	14	21	16	21
Textile Mills	7	6	2	15
Textile Product Mills	19	13	5	2
Apparel	3	4	21	7
Leather and Allied Products	6	2	20	14
Wood Products	20	19	14	10
Paper	15	20	9	3
Printing and Related Support Activities	17	17	17	9
Petroleum and Coal Products	9	5	19	19
Chemical	21	14	7	17
Plastics and Rubber Products	8	7	11	12
Nonmetallic Mineral Products	13	11	12	4
Primary Metal	4	10	3	11
Fabricated Metal Products	11	16	18	18
Machinery	18	15	6	6
Computer and Electronic Products	1	1	1	1
Electrical Equipment, Appliance, and Component	2	8	13	16
Transportation Equipment	5	3	4	5
Furniture and Related Products	12	12	10	8
Miscellaneous	10	9	8	20

Source(s): MAPI Foundation, U.S. Bureau of Labor Statistics

**Figure 3 – Labor Productivity Growth in Select U.S. Manufacturing Subsectors, Four-Year Moving Average**



Source(s): U.S. Bureau of Labor Statistics

**Table 2 – Dispersion Measures of Labor Productivity Growth Across Manufacturing Subsectors, Percentage Points**

	Year			
	1993	1999	2005	2014
<b>All Subsectors</b>				
Top - Bottom	11.4	23.8	12.6	6.4
Standard Deviation	2.4	4.4	2.6	1.5
<b>All Subsectors, Excluding Computer and Electronic Products</b>				
Top - Bottom	3.5	10.5	11.0	6.2
Standard Deviation	1.0	2.1	2.2	1.4

Source(s): MAPI Foundation and U.S. Bureau of Labor Statistics

**Table 3 – Ranking by Four-Year Moving Average of Multifactor Productivity Growth**

<b>Subsector</b>	<b>1993</b>	<b>1999</b>	<b>2005</b>	<b>2014</b>
Food, Beverage, and Tobacco Products	10	17	18	14
Textile Mills and Textile Product Mills	9	4	10	8
Apparel and Leather and Allied Products	3	12	16	18
Wood Products	17	15	17	10
Paper	6	10	6	9
Printing and Related Support Activities	14	11	2	2
Petroleum and Coal Products	2	2	7	13
Chemical	16	13	13	17
Plastics and Rubber Products	8	3	15	6
Nonmetallic Mineral Products	7	7	8	5
Primary Metal	4	9	9	16
Fabricated Metal Products	11	14	11	7
Machinery	18	16	4	11
Computer and Electronic Products	1	1	1	1
Electrical Equipment, Appliance, and Component	15	18	5	12
Transportation Equipment	13	6	3	3
Furniture and Related Products	5	8	12	4
Miscellaneous	12	5	14	15

Source(s): MAPI Foundation and U.S. Bureau of Labor Statistics

**Table 4 – Ranking by 10-Year Moving Average of Utility Patent Awards**

Subsector	1974	1984	1994	2004	2012
Food	15	15	15	15	15
Beverage and Tobacco Products	16	16	16	16	16
Textiles, Apparel, and Leather	10	10	10	10	10
Wood Products	13	13	12	12	11
Paper and Printing	12	11	11	11	12
Chemical	4	3	3	3	3
Plastics and Rubber Products	6	6	6	7	8
Nonmetallic Mineral Products	9	9	9	9	9
Primary Metal	11	12	13	14	14
Fabricated Metal Products	3	4	4	5	6
Machinery	1	1	2	2	2
Computer and Electronic Products	2	2	1	1	1
Electrical Equipment, Appliance, and Component	5	7	7	6	5
Transportation Equipment	8	8	8	8	7
Furniture and Related Products	14	14	14	13	13
Miscellaneous	7	5	5	4	4

Source(s): MAPI Foundation and U.S. Patent and Trademark Office

**Table 5 – Share of Total Manufacturing Utility Patent Awards**

<b>Subsector</b>	<b>1974</b>	<b>1984</b>	<b>2004</b>	<b>2012</b>
Food	1	1	0	0
Beverage and Tobacco Products	0	0	0	0
Textiles, Apparel, and Leather	1	2	1	1
Wood Products	1	1	1	1
Paper and Printing	1	1	1	1
Chemical	11	13	11	9
Plastics and Rubber Products	8	8	6	4
Nonmetallic Mineral Products	3	3	2	2
Primary Metal	1	1	0	0
Fabricated Metal Products	12	12	8	6
Machinery	23	20	13	12
Computer and Electronic Products	17	18	37	44
Electrical Equipment, Appliance, and Component	8	7	6	7
Transportation Equipment	5	5	4	5
Furniture and Related Products	1	1	1	1
Miscellaneous	7	8	9	8

Source(s): MAPI Foundation and U.S. Patent and Trademark Office



**Table 6 – Ranking by Four-Year Moving Average of Capital Intensity Growth**

<b>Subsector</b>	<b>1993</b>	<b>1999</b>	<b>2005</b>	<b>2013</b>
Food, Beverage, and Tobacco Products	11	15	12	6
Textile Mills and Textile Product Mills	16	10	7	11
Apparel, Leather, and Allied Products	5	1	1	13
Wood Products	18	16	17	16
Paper	7	13	10	5
Printing and Related Support Activities	10	8	4	4
Petroleum and Coal Products	15	14	18	10
Chemical	4	4	5	1
Plastics and Rubber Products	14	6	9	14
Nonmetallic Mineral Products	17	18	13	7
Primary Metal	13	17	14	17
Fabricated Metal Products	8	12	15	18
Machinery	6	3	16	8
Computer and Electronic Products	1	2	2	2
Electrical Equipment, Appliance, and Component	2	7	8	12
Transportation Equipment	3	5	11	15
Furniture and Related Products	9	11	6	9
Miscellaneous	12	9	3	3

Source(s): MAPI Foundation and U.S. Bureau of Labor Statistics

**Table 7 – Ranking by Share of Workforce With a B.A. Degree or Higher**

<b>Subsector</b>	<b>2000</b>	<b>2005</b>	<b>2013</b>
Food	12	13	14
Beverage and Tobacco Products	6	3	3
Textiles, Apparel, and Leather	14	11	9
Wood Products	16	15	16
Paper and Printing	8	9	10
Petroleum and Coal Products	3	3	7
Chemical	2	2	2
Plastics and Rubber Products	11	10	10
Nonmetallic Mineral Products	10	11	12
Primary Metal and Fabricated Metal Products	12	13	13
Machinery	6	8	8
Computer and Electronic Products	1	1	1
Electrical Equipment, Appliance, and Component	9	7	6
Transportation Equipment	5	6	4
Furniture	15	15	15
Miscellaneous	4	3	4

Source(s): MAPI Foundation and U.S. Bureau of Labor Statistics

**Table 8 – Ranking by Average Annual Output Growth**

Subsector	1973-99	2000-14	2010-14
Food	12	6	16
Beverage and Tobacco Products	17	11	19
Textile Mills	18	20	14
Textile Product Mills	9	18	15
Apparel	20	21	21
Leather and Allied Products	21	19	10
Wood Products	14	13	7
Paper	11	16	17
Printing and Related Support Activities	4	17	20
Petroleum and Coal Products	16	4	13
Chemical	6	7	18
Plastics and Rubber Products	2	10	5
Nonmetallic Mineral Products	15	12	9
Primary Metal	19	8	2
Fabricated Metal Products	13	9	6
Machinery	8	5	3
Computer and Electronic Products	1	1	4
Electrical Equipment, Appliance, and Component	10	14	11
Transportation Equipment	5	3	1
Furniture and Related Products	7	15	8
Miscellaneous	3	2	12

Source(s): MAPI Foundation and Federal Reserve Board

## Table 9 – Drivers of Multifactor Productivity Growth in Select Manufacturing Subsectors

Dependent Variable: Four-Year Moving Average of Multifactor Productivity Growth

Sample: 1992-2012, Annual data (t-statistics in parentheses)

Independent Variable/ Subsector	Patents	Equipment Investment	Equipment Investment (Lag 1)	Constant	Adjusted R <sup>2</sup>	Durbin- Watson
Computer and Electronic Products	-0.0003 (-7.28) <sup>***</sup> Lags = 4	-0.0018 (-0.08) Lags = 4	N/A	19.45 (13.54) <sup>***</sup>	0.85	2.00
Machinery	0.00032 (1.22)	0.018 (2.50) <sup>**</sup>	0.012 (1.39)	-3.62 (-1.04)	0.81	1.84
Transportation Equipment	0.00085 (1.97) <sup>*</sup>	0.033 (2.49) <sup>**</sup>	N/A	-3.28 (-1.76) <sup>*</sup>	0.48	1.83
Chemical	0.00037 (2.89) <sup>***</sup>	0.0043 (0.46)	N/A	-3.94 (-3.03) <sup>***</sup>	0.46	1.99
Fabricated Metal Products	0.00057 (1.70) <sup>*</sup>	0.022 (2.02) <sup>**</sup>	N/A	-4.42 (-1.71) <sup>*</sup>	0.51	1.53

Statistical Significance: <sup>\*\*\*</sup>1% level or less, <sup>\*\*</sup>5% level or less but >1%, <sup>\*</sup>10% level or less but >5%

Source(s): MAPI Foundation

## Table 10 – Drivers of Labor Productivity Growth in Select Manufacturing Subsectors

Dependent Variable: Four-Year Moving Average of Labor Productivity Growth

Sample: 1992-2013, Annual data (t-statistics in parentheses)

Independent Variable/ Subsector	Capital Intensity	Educated Labor	Constant	Adjusted R <sup>2</sup>	Durbin- Watson
Computer and Electronic Products	-1.93 (-4.92) <sup>***</sup>	7.32 (6.63) <sup>***</sup>	-6.18 (-2.26) <sup>**</sup>	0.69	0.77
Machinery	-0.54 (-4.48) <sup>***</sup>	1.32 (3.27) <sup>***</sup>	-0.61 (-0.40)	0.63	1.85
Transportation Equipment	-0.63 (-3.60) <sup>***</sup>	1.15 (2.00) <sup>*</sup>	0.89 (0.39)	0.21	1.92
Chemical	-1.19 (-2.38) <sup>**</sup>	0.88 (1.84) <sup>*</sup>	5.11 (2.50) <sup>**</sup>	0.45	2.13
Fabricated Metal Products	-0.36 (-3.14) <sup>***</sup>	0.71 (2.68) <sup>**</sup>	-0.84 (-0.77)	0.53	1.86

Statistical Significance: <sup>\*\*\*</sup>1% level or less, <sup>\*\*</sup>5% level or less but >1%, <sup>\*</sup>10% level or less but >5%

Source(s): MAPI Foundation

## Table 11 – Drivers of Labor Productivity Growth in Select Manufacturing Subsectors

Dependent Variable: Four-Year Moving Average of Labor Productivity Growth

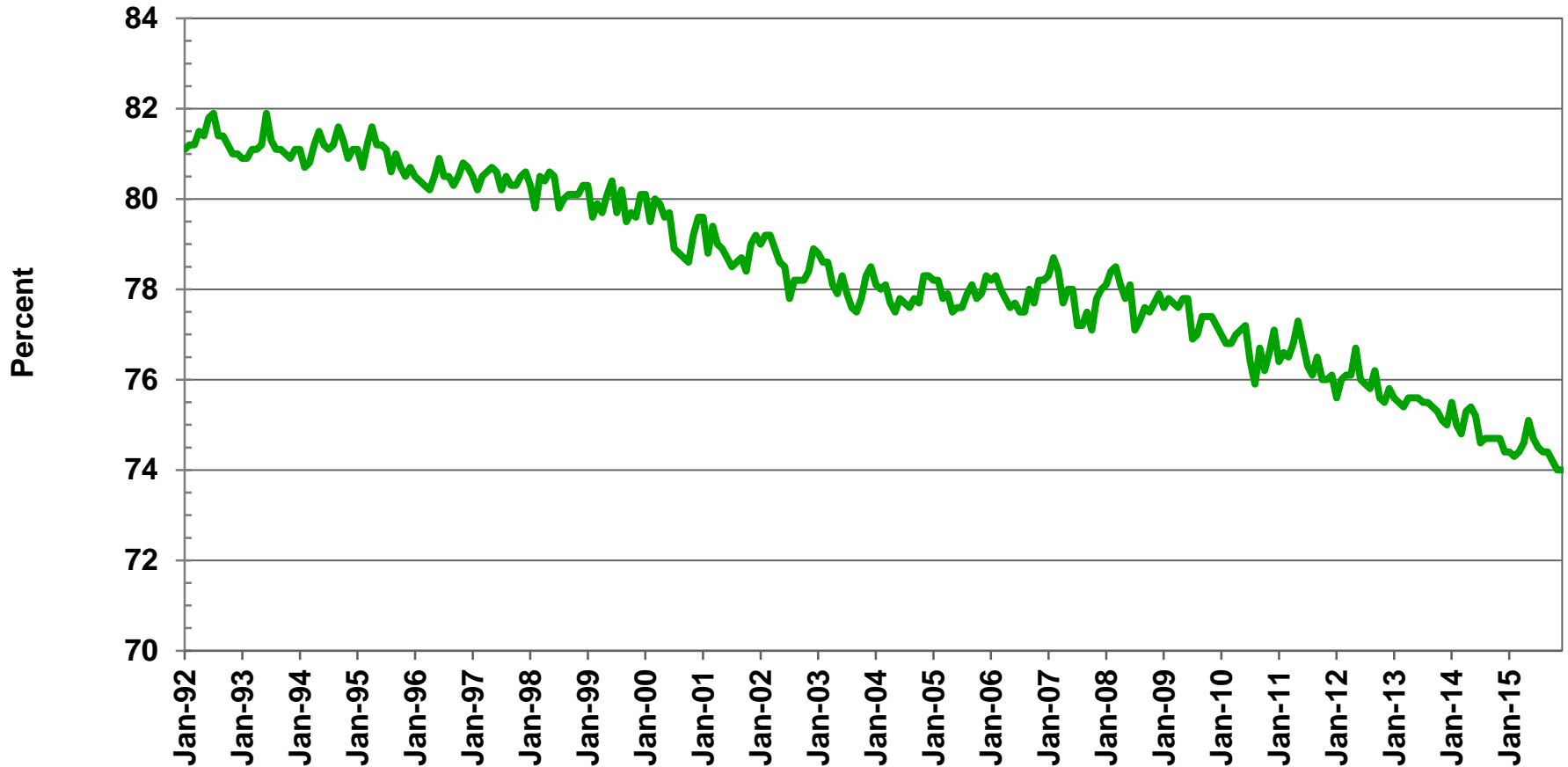
Sample: 1992-2013, Annual data (t-statistics in parentheses)

Independent Variable/ Subsector	Patents	Educated Labor	Constant	Adjusted R <sup>2</sup>	Durbin- Watson
Computer and Electronic Products	-0.00062 (-7.12) <sup>***</sup> Lags = 2	1.18 (2.22) <sup>**</sup> Lags = 5	28.40 (7.53) <sup>***</sup>	0.93	1.31
Machinery	-0.00019 (-0.75) Lags = 3	0.68 (2.52) <sup>**</sup> Lags = 2	2.14 (0.63)	0.33	1.85
Transportation Equipment	0.00065 (1.63) Lags = 5	0.56 (1.99) <sup>*</sup> Lags = 2	-1.60 (-0.64)	0.14	1.82
Chemical	-0.00019 (-1.67) Lags = 3	1.39 (8.88) <sup>***</sup> Lags = 3	-2.29 (-1.99)	0.74	2.08
Fabricated Metal Products	-0.00076 (-2.58) <sup>**</sup> Lags = 3	0.86 (4.64) <sup>***</sup> Lags = 3	3.51 (1.77) <sup>*</sup>	0.52	1.30

Statistical Significance: \*\*\*=1% level or less, \*\*5% level or less but >1%, \*10% level but >5%

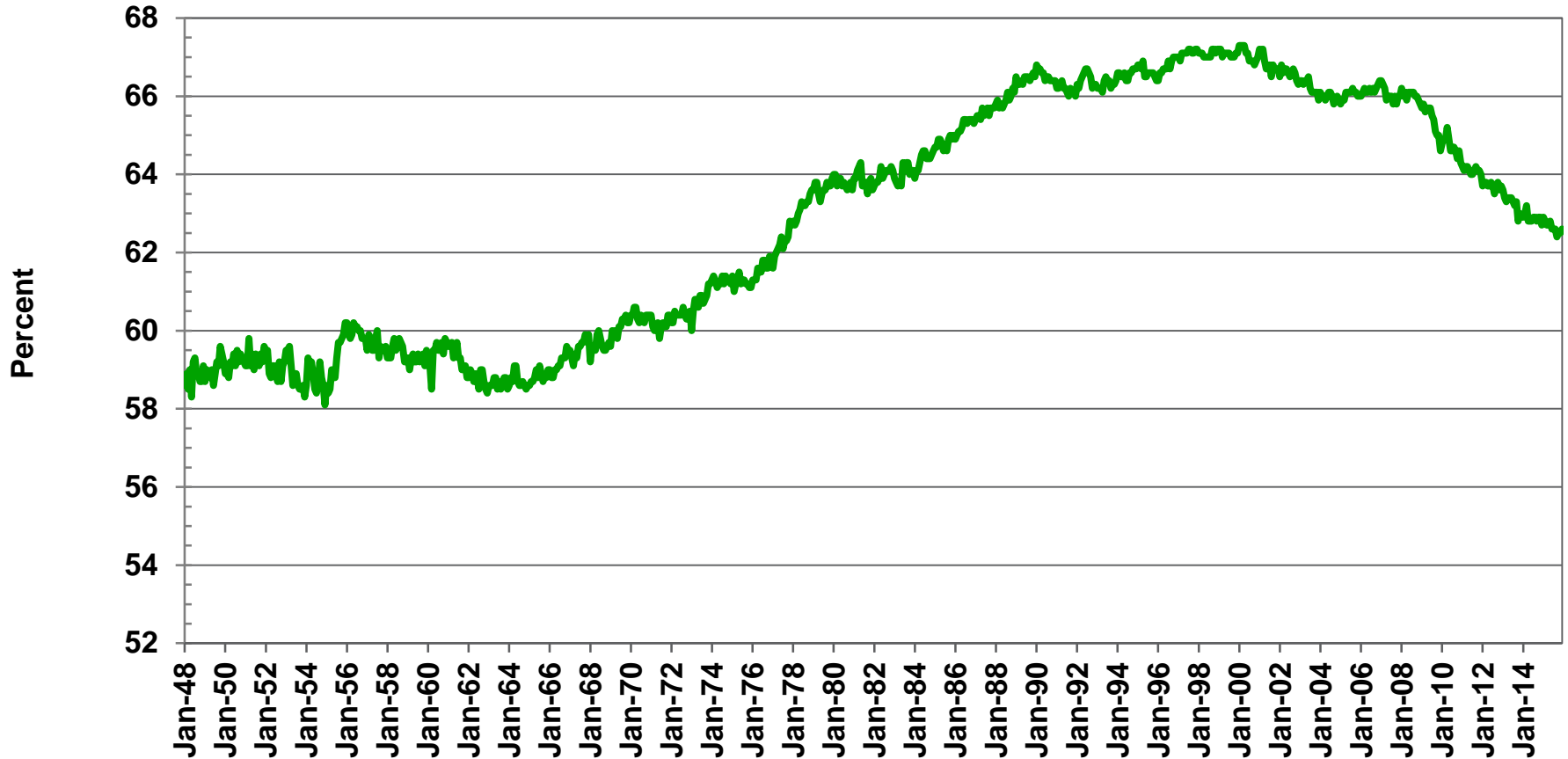
Source(s): MAPI Foundation

Figure 4 – Labor Force Participation Rate, Bachelor's Degree and Higher, Ages 25+



Source(s): U.S. Bureau of Labor Statistics

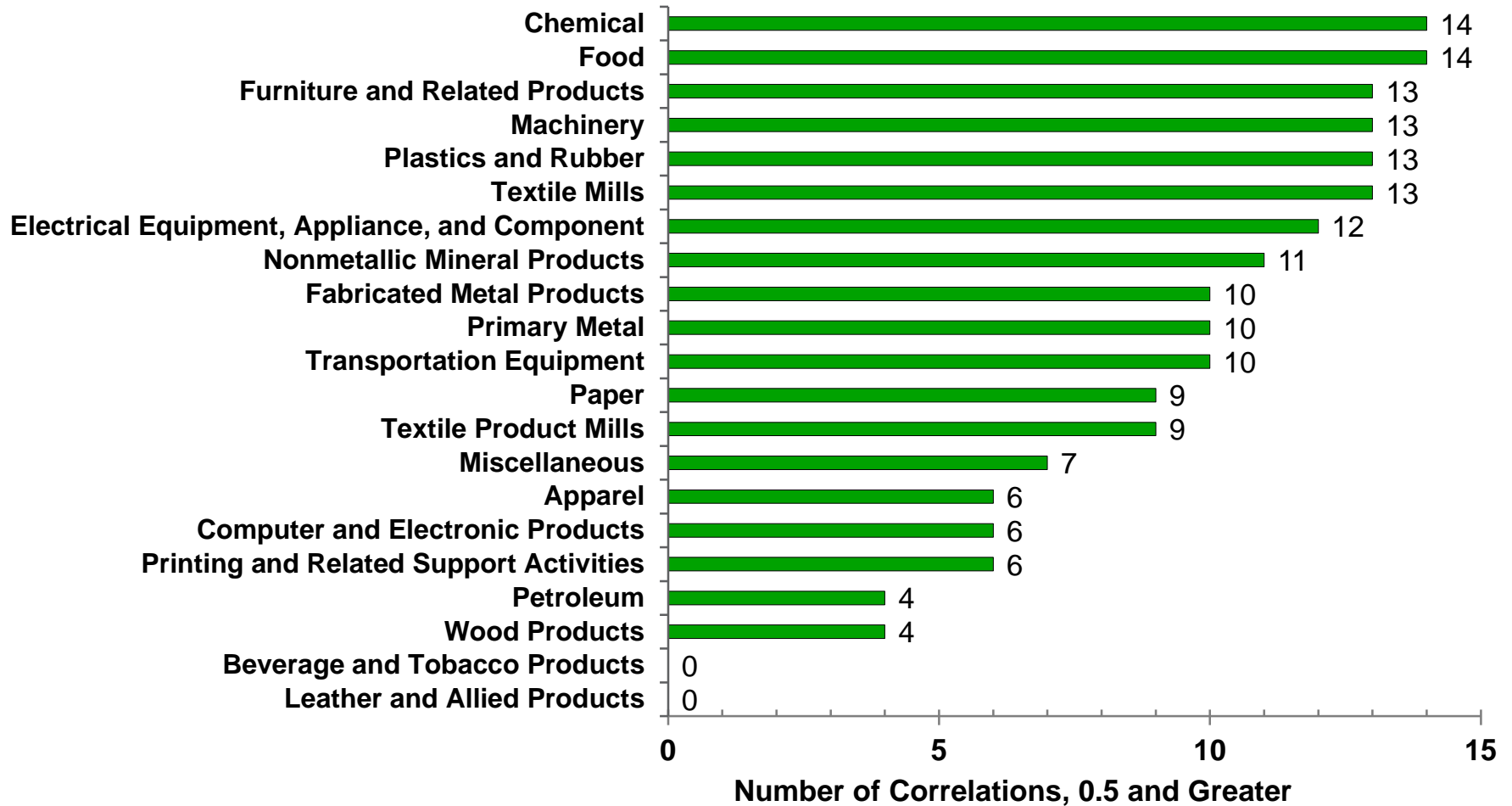
Figure 5 – Labor Force Participation Rate, Ages 16+



Source(s): U.S. Bureau of Labor Statistics



**Figure 6 – Number of Correlations of Subsector Labor Productivity Growth With Other Manufacturing Subsectors That Are at or Above 0.5**



Source(s): U.S. Bureau of Labor Statistics and MAPI Foundation

## Table 12 – One-Variable Specifications for Cross-Subsector Impacts of Multifactor Productivity Growth

Dependent & Independent Variable: Four-Year Moving Average of Multifactor Productivity Growth

Sample: 1992-2013, Annual data (t-statistics in parentheses)

Independent Variable/ Subsector	Machinery	Constant	Adjusted R <sup>2</sup>	Durbin– Watson
Computer and Electronic Products	0.78 (1.33)	8.88 (1.78)*	0.72	1.61
Transportation Equipment	0.55 (4.63)***	0.60 (3.48)***	0.48	1.41

Statistical Significance: \*\*\*1% level or less, \*\*5% level or less but >1%, \*10% level or less but >5%

## Table 13 – One-Variable Specifications for Cross-Subsector Impacts of Labor Productivity Growth

Dependent & Independent Variable: Four-Year Moving Average of Labor Productivity Growth  
 Sample: 1991-2013 annual data (t-statistics in parentheses)

Independent Variable/ Subsector	Machinery	Fabricated Metal	Computer and Electronic	Constant	Adjusted R <sup>2</sup>	Durbin- Watson
Machinery	N/A	0.72 (2.87) <sup>***</sup>	N/A	1.64 (2.10) <sup>**</sup>	0.52	1.54
Transportation Equipment	0.60 (3.57) <sup>***</sup>	N/A	N/A	1.90 (3.84) <sup>***</sup>	0.35	1.67
Fabricated Metal Products	N/A	N/A	0.11 (2.19) <sup>**</sup>	0.32 (0.48)	0.39	1.94

Statistical Significance: \*\*\*1% level or less, \*\*5% level or less but >1%, \*10% level or less but >5%