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The Economic Impact of the Medical Device Excise Tax

Michael Ramlet, Robert Book, and Han Zhong | June 4, 2012

Introduction

The Medical Device Excise Tax (“device tax”) is a tax on all medical devices sold in the United States and a component of the Affordable Care Act (ACA), President Obama’s signature legislation. The device tax will soon be center stage in the Congressional healthcare debate. A Ways and Means committee markup of repeal legislation this week will be followed by a floor vote in the House of Representatives in June. The device tax debate highlights the economic impact of the ACA.

The device tax pays, in part, for the entitlement expansions in the ACA. The 2.3 percent tax will be applied to all medical devices sold in the United States, including both U.S.-made and imported devices. The only explicit exemptions are for eyeglasses, contact lenses, and hearing aids. The Joint Committee on Taxation (JCT) anticipates the tax will generate over \$29 billion in new tax revenue between 2013 and 2022.¹

While not scheduled to begin until 2013, the economic impact of the device tax is already being felt. The artificial joint manufacturer Stryker announced plans to cut 5 percent of its global workforce (currently at over 20,000 employees) in part to reduce costs to pay the tax.²

In this paper, we estimate the full economic impact of the tax on medical device industry employment, investigate the tax’s effect on startups and small businesses, and evaluate the implications for U.S. leadership in the medical device industry.

Key Takeaways

The Medical Device Tax is a Tax on Jobs

- The device industry will finance the excise tax largely by reducing payroll employment.
- We estimate that at least 14,500 jobs will be lost, based on Joint Committee on Taxation revenue estimates and historical industry data.
- Job losses could reach as high as 47,100, or 10 percent of industry employment if the medical device industry is unable to shift the burden of the excise tax.

The Device Tax and the Demise of Small Businesses

- The device tax tilts the playing field against smaller companies who are less able to absorb the lost revenue as a result of higher fixed costs and smaller cash reserves.
- Small to medium size firms represent over 91 percent of 16,424 U.S. medical device companies.
- The impact on small businesses is visible in the dramatic drop off of venture capital deals for medical device companies in 2011 – down over 50 percent compared to any of the previous five years.

The Device Tax Threatens U.S. Innovation Leadership

- As the regulatory cost of medical device development has increased and revenues have stagnated, the number of U.S. medical device firms has dropped considerably.
- Since 2008, the U.S. medical device industry has seen an annual 5 percent decline in the number of active companies.

¹ “Description of H.R. 436, The ‘Protect Medical Innovation Act of 2011’,” *Joint Committee on Taxation*, May 29, 2012: <https://www.jct.gov/publications.html?func=showdown&id=4431>

² “Stryker to cut 5% of workforce,” *Detroit Free Press*, November 11, 2011: <http://www.freep.com/article/20111111/BUSINESS06/111110345/Stryker-cut-5-workforce>.

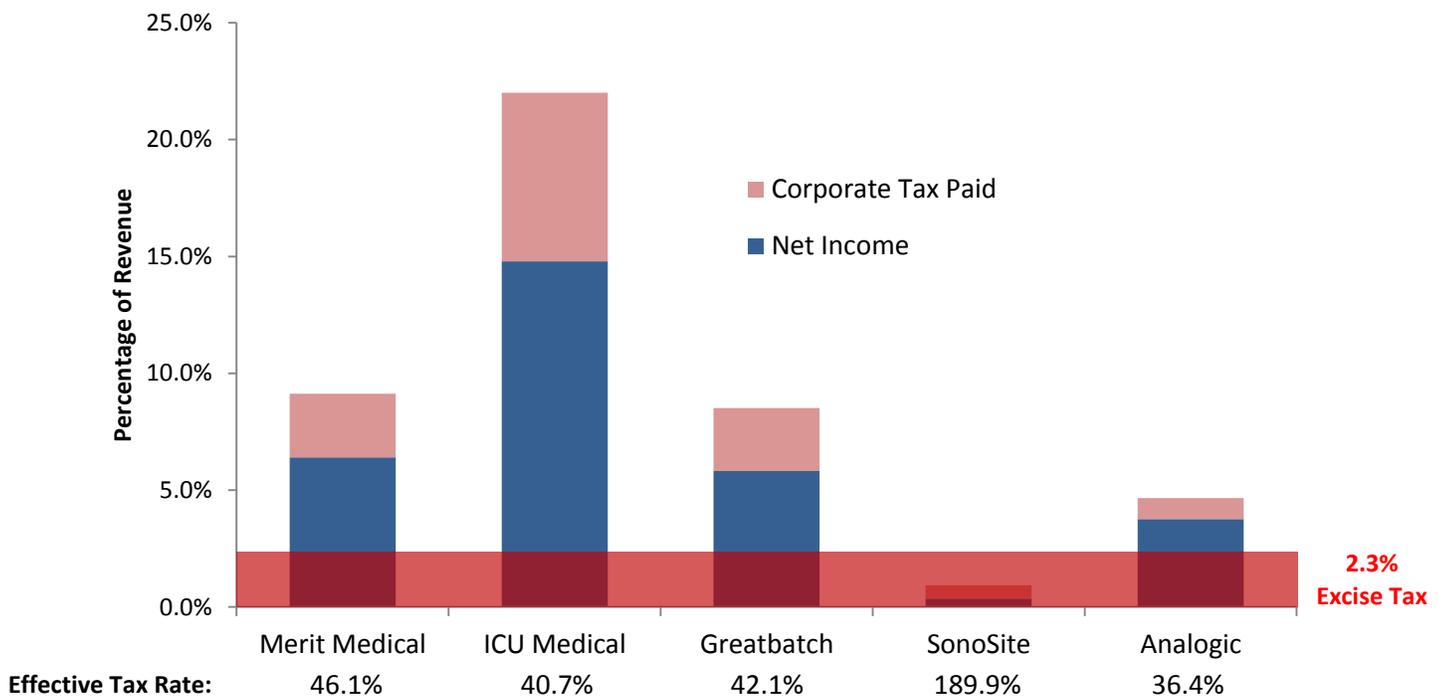
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Medical Device Excise Tax is a Tax on Jobs

The medical device industry relies on continuous innovation to provide new and improved treatments for patients, as products may have a marketable life of only a few years. In order to compete globally, companies must attract elite talent from the fields of medicine and engineering to perform research and development. In 2010, it is estimated that the industry spent 23 percent of its revenue on wages and compensation³ and employed over 474,000 employees.⁴

To offset the revenue loss due to the excise tax, medical device companies will likely have to absorb the cost of the tax as a reduction in their net revenue for the devices they sell. Note that excise taxes are taken as a percentage of a manufacturer’s revenue. Therefore regardless of whether a company generates profits, the tax is enforced at the same rate. This is tremendously damaging to companies that have low profit margins or operate with losses during a given year. Companies that make a profit already pay a 35 percent federal corporate tax and 5 to 10 percent state corporate tax on income. On average, this excise tax takes another 5 percent cut to profits.⁵ Combined, medical device companies pay 45 to 50 percent of their profit in taxes. Figure 1, is an illustrative example of how the new excise tax and existing corporate taxes would impact current medical device companies.

Figure 1: Effect of Excise Tax on Net Income for Illustrative Medical Device Companies



Source: Author’s calculations based on data from [Mass Device](#) and 2011 company SEC filings

³ Samadi N. “IBISWorld Industry Report 33451b: Medical Device Manufacturing in the US,” June 2011.

⁴ National American Industry Classification System (NAICS): #325413, #334510, #334517, #339112, #339113, #339114, #339116

⁵ Perriello B. “By the Numbers: How the Medical Device Tax Shakes Out,” *Mass Device*, March 2012:

<http://www.massdevice.com/news/numbers-how-medical-device-tax-shakes-out?page=2>

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In the short term, most of the revenue reduction from the excise tax is likely to be absorbed by the device industry in the form of reduced payroll employment. If the entire revenue reduction was absorbed by the medical device industry, job losses could reach as high as 47,100, or 10 percent of the total industry employment.

To develop a more conservative projection of the likely reduction in employment, we estimated the relationship between revenue and employment in the industry.⁶ Through our analysis, we found that an average of 1.274 direct industry jobs and 2.210 indirect jobs are lost per year for each \$1 million reduction in industry revenue that year.⁷

This estimate takes into account only direct employment by the medical device industry. Notably, a portion of the revenue from that industry flows through to suppliers of goods and services from other industries. To estimate this impact, we subtracted total revenue from value added by the industry, to obtain the dollar value of inputs supplied by other industries. The average ratio of the value of inputs to value added over the period of our data is 1.658. Output per job in 2002-2010 was 1.332 times higher in the device industry than in the overall economy supplying these inputs.⁸ Overall, this indicates additional 2.210 jobs will be lost in other industries for every job lost in the medical device industry.

This likely underestimates the impact for two reasons. First, the input ratio has increased steadily from 1.54 in 2002 to 1.86 in 2010; the annual figure decreased only twice in that period, and each time the subsequent increase was larger in magnitude than the preceding decrease. The ratio is projected to rise even further in future years, to 1.94 by 2015.⁹ Second, productivity per job in the medical device industry has been increasing faster than in the rest of the economy, from 1.072 times the average in 2002, to 2.058 times the average in 2010. There is no reason to expect this trend will reverse, but by using the average over that period we are being cautious. For this reason, our estimates for job loss in supplier industries should be viewed as somewhat conservative.

The annual tax collection projections and estimated job losses are shown in Table 1. Annual tax collections from the device tax are expected to be over 29 billion in the coming decade. Based on the JCT projections, we estimate a reduction of 14,500 medical device industry jobs by 2022.

Table 1: Annual Estimated Jobs Losses Due to the Medical Device Excise Tax¹⁰

Year	JCT Projected Tax Collections (\$)	Cumulative Job Losses
2013	1,742,000,000	-7,100
2014	2,562,000,000	-10,500
2015	2,668,000,000	-10,900
2016	2,771,000,000	-11,300
2017	2,889,000,000	-11,800
2018	3,012,000,000	-12,300

⁶ Samadi, *op. cit.*

⁷ We ran an ordinary least-squares regression of first differences (“changes”) in employment on first differences (“changes”) in revenue (in millions of constant dollars). The result was a statistically significant coefficient of 1.205 (with a t-statistic of 2.80).

⁸ This is the ratio of value added per job in the medical device industry to GDP per job in the overall economy.

⁹ Samadi, *op. cit.*

¹⁰ “Description of H.R. 436, The ‘Protect Medical Innovation Act of 2011,’” *Joint Committee on Taxation*, May 29, 2012:

<https://www.jct.gov/publications.html?func=showdown&id=4431>

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2019	3,143,000,000	-12,800
2020	3,280,000,000	-13,300
2021	3,428,000,000	-13,900
2022	3,582,000,000	-14,500
10-Year Total	29,076,000,000	-14,500

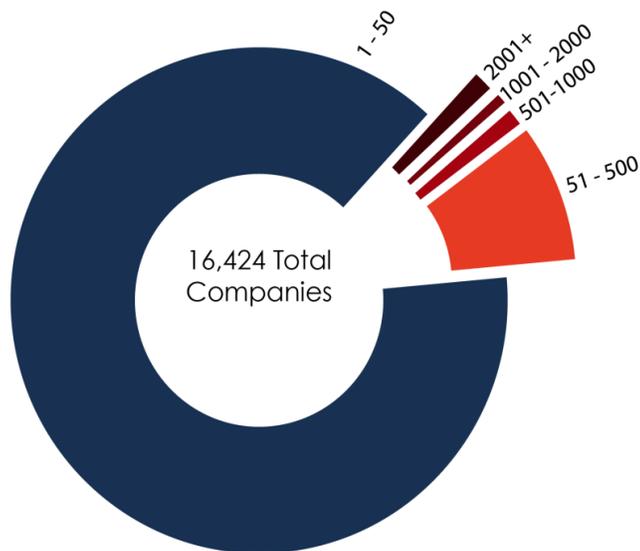
As noted above, the reduction in industry revenue (or equivalently, the amount of tax collected) from a 2.3 percent tax is not simply 2.3 percent of whatever revenue would have been otherwise, since both prices and quantities sold could change as a result of the tax. We assume that JCT took these factors into account when making their projections.

The Device Tax and the Demise of Small Businesses

Small businesses and startups in the medical device industry will have greater difficulty adapting to the excise tax burden. The structure of the device tax favors larger companies who are better positioned to absorb the lost revenue as a result of lower fixed costs and larger cash reserves.

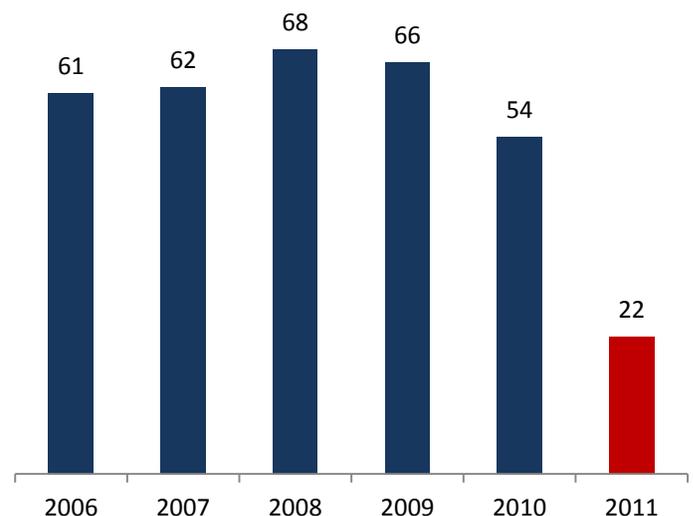
The tax could therefore be especially devastating to the 13,303 U.S. medical device companies with 50 or fewer employees; 1,200 companies with 50 to 500 employees; and roughly 450 companies with fewer than 1000. Together these small to medium size firms represent over 91 percent of 16,424 U.S. medical device companies.⁴

Figure 3: U.S. Companies by Employee Size



Source: Hoovers

Figure 4: Venture Capital Deals for Medical Device Companies



Source: PwC MoneyTree Report

The impact on small businesses is already visible in the dramatic drop off in venture capital deals for medical device companies in 2011 – over 50 percent less than any of the previous five years (Figure 4).

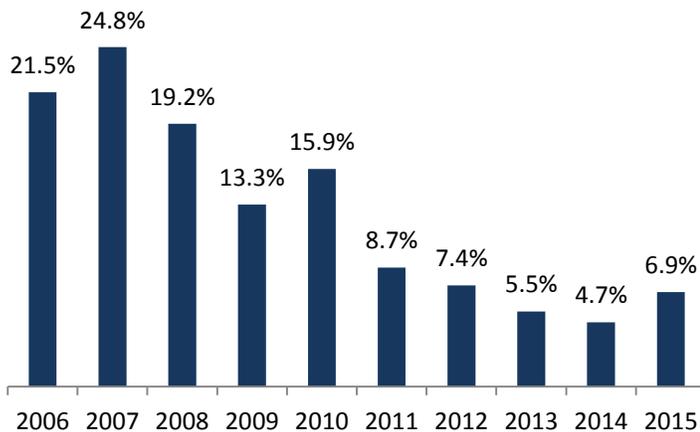
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The Device Tax Threatens U.S. Innovation Leadership

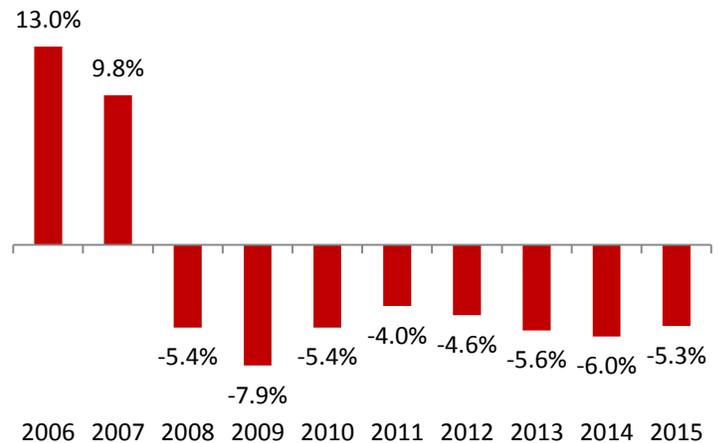
The medical device industry is uniquely American. The industry is dominated in size and scope by American firms, but future U.S. leadership depends on whether the regulatory and tax environment nurtures growth or suppresses innovation. The reality is that U.S. dominance in the industry is receding.

As the regulatory cost of medical device development has increased and revenues have stagnated (Figure 4), the number of U.S. medical device firms has dropped considerably. Since 2008, the U.S. medical device industry has seen an annual 5 percent decline in the number of active companies (Figure 5). This annual decline is expected to continue and accelerate with new investment dollars going abroad, or to other industry sectors as a result of the medical device excise tax.

**Figure 4: U.S. Medical Device Industry Revenue
(% Annual Change)**



**Figure 5: Change in U.S. Medical Device Companies
(% Annual Change)**



Source: IBISWorld Industry Report: Medical Device Manufacturing in the U.S. April 2012.

As Congress begins the debate over whether to repeal the medical device excise tax, the economic lesson is clear. If left in place, medical device industry employment will decline, medical device startups and small businesses will decline, and U.S. leadership in the medical device industry will decline. The medical device excise tax is bad tax policy, bad economic policy and bad healthcare policy.