JOINT ECONOMIC COMMITTEE
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MAJORITY STAFF ANALYSIS

An Economic Analysis of the Medical Device Tax

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INTRODUCTION

Since January 1, 2013, manufacturers, producers, and importers have grappled with a 2.3 percent excise tax on the sale of certain medical devices as a result of the Patient Protection and Affordable Care Act (ACA).[1,2] Though the true impetus for the tax was likely purely to raise revenue, proponents of the tax claim that the medical device manufacturing industry should pay for the benefits it gains from "the increased demand for their products due to the expansion of health insurance coverage."[3]

Many members of Congress, however, view the tax as a punitive revenue-raiser that lacks substantial logic. In this vein, members have sought outright repeal of the medical device excise tax (MDT) since passage of the ACA, most recently in the form of H.R. 160, the *Protect Medical Innovation Act of 2015.* House Ways and Means Committee Chairman Paul Ryan issued the following statement upon House passage of the bill:

> "Taxing medical devices not only stifles innovation and threatens American jobs, but drives up health care costs and makes treatments less accessible for those who need them most. By repealing this tax, American medical innovation can refocus on encouraging discovery and finding solutions for the health challenges—and emergencies—so many Americans face."[4]

Indeed, negative effects on innovation, job creation, and investment represent only some of the sound arguments against the MDT.

POORLY CONCEIVED TAX POLICY

At its most basic level, the excise tax violates commonly accepted principles of sound tax policy. In a 2015 report, the Congressional Research Service paid close attention to excise taxes in particular, stating that, "Viewed from the perspective of traditional economic and tax theory…the tax is

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[1] For the purposes of this paper, the ACA will be defined as the combination of the Patient Protection and Affordable Care Act of 2010 and the Health Care and Education Reconciliation Act of 2010, the latter of which is the legislative vehicle by which the medical device excise tax came about.
[2] I.R.C. §4191(a)
[3] Gravelle, Jane G. and Sean Lowry, "The Medical Device Excise Tax: Economic Analysis," Congressional Research Service, June 18, 2015: http://fas.org/sgp/crs/misc/R43342.pdf.
[4] U.S. House of Representatives Committee on Ways and Means, "House Passes Bill Repealing Harmful Medical Device Tax," Press Releases, June 18, 2015: http://waysandmeans.house.gov/house-passes-bill-repealing-harmful-medical-device-tax/.

challenging to justify. In general, tax policy is considered more efficient when differential excise taxes are not imposed. It is generally more efficient to raise revenue from a broad tax base."[5]

At its core, tax policy should promote economic growth by raising revenue in the least distortive manner possible.[6] More broadly, tax policy can be judged using six criteria.[7] Sound tax legislation should embody:

1. Simplicity
2. Transparency
3. Neutrality
4. Stability
5. No retroactivity
6. Broad base and low rates

Judged by these six criteria, it is clear that the medical device excise tax is poorly conceived tax policy as it violates the principles of:

- Simplicity: The MDT imposes compliance and administrative costs that disproportionally affect small firms, which make up over 80 percent of the industry.[8, 9]

- Transparency: Because the medical device tax is imposed on the manufacturer, end-users of medical device taxes never see the additional cost that the MDT piles on to their bill. The tax is made even more opaque by the fact that it is levied on prices rather than on a per-product basis like most excise taxes, as price-based taxes often leave consumers in the dark.[10]

- Neutrality: Targeting such a narrow set of businesses and products that are generally not substitutable will necessarily impact consumer access to quality care, either through reduced investment in new treatments or ACA-related increases in out-of-pocket costs. In doing so, the MDT distorts some of the most important economic decisions made—those affecting the health of citizens that the ACA intended to help.

  The law's exemption of exported devices—which account for 38 percent of industry output—further narrows the tax base.[11] The narrower the base of a tax, the greater its distortionary effects.[12] In this case, exporting looks *much* more attractive to a manufacturer than it did prior to the MDT. The exemption gives incentives to medical device companies to allocate a piece of their fixed costs to foreign market research. The costs of undertaking this change

[5] Gravelle et al.
[6] Tax Foundation, Principles of Sound Tax Policy: http://taxfoundation.org/principles-sound-tax-policy
[7] Some economists may include fairness as a seventh principle. The disparity of views between what constitutes economic and social fairness, however, should disqualify it as a criterion.
[8] We define a small firm as one with assets less than $500,000.
[9] Gravelle et al
[10] Afonso, Whitney, "The Challenge of Transparency in Taxation," *Mercatus on Policy*, Mercatus Center of George Mason University, June 2015: http://mercatus.org/sites/default/files/Afonso-Transparency-Taxation-MOP.pdf
[11] Gravelle, Jane G. and Sean Lowry, "The Medical Device Excise Tax: Economic Analysis," Congressional Research Service, June 18, 2015: http://fas.org/sgp/crs/misc/R43342.pdf.
[12] Owens, Jeffrey, "Fair Tax Competition: A Pillar of Positive Economic Reform," presentation at the INEKO International Conference on Economic Reforms for Europe in Bratislava, Slovakia. Delivered March 18, 2004.

would be relatively small since the majority of industry output comes from firms that exported prior to the imposition of the MDT. In contrast, benefits may be relatively large.

- Stability: Federal receipts from the MDT have been understandably more volatile than anticipated to date. The complexity of the ACA and the reporting requirements it imposed on businesses has led to confusion for businesses as well as the Internal Revenue Service (IRS). The Treasury Inspector General for Tax Administration (TIGTA) identified nearly $120 million in MDT discrepancies in the first half of 2013 alone. TIGTA also noted that, "the IRS erroneously assessed 219 'failure' to deposit penalties" during the same period.[13]

In addition to the onerous effects brought on by the mere imposition of the tax, the structure of the tax itself has taken and will continue to take a toll on small, growing companies with little or nonexistent profits. Even companies that are not profitable must still pay the MDT since it is assessed on the amount of revenue collected, rather than profit booked, from the sale of a manufactured device.

Most excise taxes are imposed on quantity rather than price (e.g. the federal gas tax is levied per gallon of gas, not the price of the purchase). But the MDT is an *ad valorem* tax—a tax based on price. *Ad valorem* excise taxes are not the norm by any means because excise taxes imposed on quantity are generally viewed as more efficient. Excise taxes based on price can be particularly harmful.

For example, imagine a company that sells $1 million worth of taxable devices in a given year. After costs and taxes, the company books a profit of $23,000 that represents a 2.4 percent profit margin. Following enactment of the MDT, the same company must pay an extra $23,000 in taxes, **reducing profits to zero.** The situation may seem unlikely, but basic business strategy indicates it is very real. Small businesses must compete on price as they attempt to gain market share in an industry. In turn, this squeezes margins and puts

One Unintended Consequence of Violating the Principle of Neutrality

Firm X currently manufactures medical devices that it sells for $200 each. Prior to the MDT, firm X estimated that it would sell 1 million taxable devices per year, yielding sales of $1 billion over its five-year investment horizon. Of this total, firm X expects that 38 percent of all sales—or $380 million—will come from exports.

Then the MDT takes effect. Now $620 million of expected sales are subject to the 2.3 percent tax, lowering expected after-tax domestic sales to $606 million. Assuming the firm "eats" the full cost of the tax, an export is still worth $200 while a domestic sale is worth only $195.40—meaning exports are now 2.4 percent more attractive than domestic sales.

The business must make up this shortfall in order to sustain growth (or keep from shrinking). To do this, the company will take a lump sum from cash allocated for research and development or domestic expansion and put it toward activities such as market research that will lead to higher export growth solely due to government intervention.

[13] Treasury Inspector General for Tax Administration, "The Affordable Care Act: An Improved Strategy Is Needed to Ensure Accurate Reporting and Payment of the Medical Device Excise Tax," Reference No. 2014-43-043, July 17, 2014.

entrepreneurs in different position when those thin margins are erased by a tax on gross sales.

REBUTTALS OF ARGUMENTS FOR THE TAX

Proponents of the medical device tax have commonly used five arguments in support of the imposition of the tax and/or against its repeal:

The following sections rebut these arguments in turn:

1. *The tax will capture the monetary benefit that the ACA will yield due to higher demand.*[14]

If this was the logic behind the tax, policymakers certainly made a hugely consequential conclusion that was based on assumptions the validity of which could never be proven. The decision to impose the MDT was ostensibly made under the assumption that medical device manufacturers would reap financial windfalls because of increased demand brought about by the expansion of health insurance coverage. First, many medical devices that are taxed under the law—such as pacemakers, heart valves, and manufactured hip joints—are used mainly in patients covered by Medicare. Demographic changes, not the Affordable Care Act, will drive the patient base of Medicare. The Congressional Budget Office projects Medicare monthly enrollment will increase by nearly 40 percent over the next decade.[15] None of the potential increases in medical device spending in this population will be due to provisions of the ACA. In fact, the health law contains much-touted provisions to limit the growth of Medicare spending, effectively squeezing the margins of device manufacturers and service providers alike.[16]

Second, the assumption of financial windfalls due to expanded coverage relies on other assumptions, namely that the ACA will not increase out-of-pocket costs for consumers or result in higher premiums. Unfortunately, the data show that these assumptions have proven false; deductibles have risen and premiums are estimated to skyrocket in 2016 as insurers properly price the extra risk that the ACA has forced them to bear.[17]

Even more troubling is what would happen if the same logic were applied to other legislation. Had lawmakers used similar logic when devising other major policies, the United States would currently:

- Tax renewable energy companies to capture the monetary benefits they reap due to federal subsidies.

[14] American Medical Student Association et al.,
[15] Congressional Budget Office, "March 2015 Medicare Baseline," March 9, 2015: https://www.cbo.gov/sites/default/files/cbofiles/attachments/44205-2015-03-Medicare.pdf
[16] Congressional Budget Office, "The 2015 Long-Term Budget Outlook," June 2015: http://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/50250-LongTermBudgetOutlook-2.pdf
[17] Centers for Medicare and Medicaid Services, ACA-Compliant Products, Rate Review Submissions: https://ratereview.healthcare.gov/#urrresults?U2FsdGVkX1%2BPuTIlmgPeYssb4EgzvAQcX%2BwVyZk8YCopUriSCwVRG%2BLs%2Fg9%2BppWHfZus9d9eUq6GVwkZLNkldQ7xiJ0%2Fex17%2F914avANUXXQ5OMlsWKZtyCBOpnsVQL1

- Tax individuals for protection from future taxpayer bailouts which President Obama claimed the *Consumer Protection and Wall Street Reform Act* (i.e. *Dodd-Frank*) would put to an end.[18]

Simply put, public policy should not punish individuals, companies, or industries simply because these entities may benefit by happenstance from the laws crafted by Congress.

2. *The medical device industry has done just fine since the imposition of the MDT in 2013, which makes clear that the tax has not had any deleterious effects on progress in the sector.*

While arguing against repeal in May 2015, Senate Minority Leader Harry Reid went so far as to say, "I'm not going to cry any big tears over the device folks… [the industry] is doing extremely well with ObamaCare."[19]

This line of thinking, suffers from one serious, fundamental flaw: Proving a negative is impossible. Simply put, we can never know how much better the industry would be faring had the tax not been levied. In the face of this logic, proponents of the law cite positive profitability data from publicly held medical device companies as proof that the tax has not had serious, industry specific economic consequences.[20]

The source of information in this case leads to yet another serious error in basic econometrics: sampling bias. Any study of the effect on medical device companies will necessarily leave out all privately held businesses since they are not required to file financials with the Securities and Exchange Commission. However, a close look at the industry shows that the overwhelming majority of medical device manufacturing firms are not publicly held. In light of this constraint, results of any study on profitability will necessarily include sampling bias—that is, results relying on the sample will include systematic error.[21] Therefore, the conclusions of reports correlating industry profitability with the imposition of the MDT have been, and will continue to be, flawed to the point of unreliability.[22]

In addition to the selection bias of only examining public companies, reports also fail to distinguish performance between domestic and international operations. Many companies have grown in the past few years, but much of this growth is occurring in emerging markets, which are not subjected to the device tax. This fact is reflected in publicly available domestic and international employment

[18] President Barack Obama, "Remarks by the President at Signing of Dodd-Frank Wall Street Reform and Consumer Protection Act," The White House Office of the Press Secretary, July 21, 2010: https://www.whitehouse.gov/the-press-office/remarks-president-signing-dodd-frank-wall-street-reform-and-consumer-protection-act
[19] Ferris, Sarah, "Medical device tax in GOP crosshairs," *The Hill*, January 6, 2015: http://thehill.com/business-a-lobbying/business-a-lobbying/228557-medical-device-tax-in-republican-crosshairs
[20] Gravelle et al.
[21] Organization for Economic Cooperation and Development, Glossary of Statistical Terms: http://stats.oecd.org/glossary/detail.asp?ID=3606
[22] For examples, see: Swirsky, Lisa, "Medical Device Manufacturer Profits," *Health Policy Brief*, ConsumersUnion, September 2013: http://consumersunion.org/wp-content/uploads/2013/10/Medical_Device_Report.pdf; Van de Water, Paul, "Excise Tax Should Not Be Repealed," Center on Budget and Policy Priorities, March 11, 2013; "Medical Device Tax Would mostly Hit the Biggest Firms," MedCity News, March 24, 2010: http://medcitynews.com/2010/03/medical-device-tax-would-mostly-target-the-biggest-companies; Spiro, Topher, "The Myth of the Medical-Device Tax," *The New York Times*, October 16, 2013: http://www.nytimes.com/2013/10/17/opinion/the-myth-of-the-medical-device-tax.html?_r=0

numbers disclosed in companies' 10-Ks. Firms that made this distinction reported an increase of over 3,000 international jobs versus a decrease of nearly 2,000 jobs based in the United States.[23]

3. *The tax exempts exports, which account for 38 percent of sales, meaning that the tax will only affect 62 percent of industry revenue. Coupled with the retail exemption and safe harbor exemption, this makes the actual impact on the industry a small fraction of 2.3 percent of total sales.*

Not only does this argument fail to prove a point, it actually raises a point that ought to steer the argument toward repeal. First, the export exemption will mostly benefit large firms which were already exporting and have the infrastructure to expand international operations to take advantage of the exemption. In contrast, smaller firms—which make up the vast majority of the industry—are too busy running their day-to-day operations to consider exporting. The tax will cut particularly deeply into the profits of these small businesses since they are less likely to export than their large counterparts.[24]

In addition, the export exemption gives foreign manufacturers an advantage over domestic ones. Since the tax is levied on the party that imports the products rather than the foreign manufacturer, international firms can largely avoid the tax if they have sufficient market power and do not use U.S. subsidiaries to import their products.

4. *The tax will simply be passed on in the form of higher prices, having no effect on industry employment or profit margins.*

This statement simply misses a much bigger, more basic point than how the industry could circumvent the effects of the MDT. It fails to acknowledge the broader effects that basic economic theory implies the tax will have on all healthcare consumers. How the tax is dealt with by manufacturers is irrelevant. Firms may choose to either pass the tax on in the form of higher prices *or* incorporate the tax into the cost of doing business.[25]

If the former turns out to be the case—which is unlikely given the cost constraints under which hospitals are operating today—end-use consumers will be left with less disposable income. Take the case of seniors who purchase dentures. Though dentures themselves are not taxable under the MDT, most of the intermediate goods used to manufacture dentures are.[26] As the cost of making dentures goes up, so will the sales price.

An even worse outcome would result from manufacturers having to "eat" all or a portion of the 2.3 percent tax. In this case, two undesirable outcomes would materialize:

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[23] Joint Economic Committee staff analysis of 10-K filings of companies comprising the SPDR SP Health Care Equipment ETF, and reporting a positive 52-week percentage change as of November 2014. 48 companies reported positive growth, 14 of which disclosed separate domestic and international employment figures.
[24] U.S. Commercial Service, "Exporting is Good for Your Bottom Line," U.S. Department of Commerce International Trade Administration: http://www.trade.gov/cs/factsheet.asp
[25] For the sake of simplicity, we assume that this is a binary choice. In reality, companies may pass the tax on to consumers in the form of higher prices, choose to cut costs, or some combination of the two.
[26] Washington Wire, "Medical Devices: What's Taxed, What Isn't," The Wall Street Journal, October 15, 2013: http://blogs.wsj.com/washwire/2013/10/15/medical-devices-whats-taxed-what-isnt/

1. Funds previously available for research and development, capital investment, or disbursal of dividends to shareholders will now, at least in part, go to paying the MDT.

2. Businesses will cut costs in ways that least affect the quality of their product. To accomplish this, a company could lay off workers, reduce hours for current non-salaried employees, or some combination of the two. In this case, by definition, industry unemployment would rise and aggregate income would fall at a time when an anemic economy can ill afford either.

In either case, the return on investment required by shareholders (which exist in both privately held as well as publicly held companies) will increase, resulting in lower levels of available equity investment, an increase in corporate bond interest rates, or some combination of the two.

5. *Medical devices are mostly used as a part of a larger procedure, so the demand is not sensitive to the price of one device.*

Regarding the sensitivity to demand, research readily shows that this is not necessarily the case.[27] As Americans learn how much of the total cost of a procedure they personally owe, they should become increasingly sensitive to price (similar to the effect of increased transparency).[28] Out-of-pocket costs for those with silver plans on the federal exchange are twice as high as those for individuals whom are covered by employer-sponsored health insurance.[29] These high costs have increasingly forced individuals to put off medical procedures.[30]

The assumption that medical devices are generally used as part of a larger procedure is also suspect. Consider devices used for diagnostic purposes, such as X-ray, CT, and MRI machines. These tools are crucial to preventative medicine, diagnosing everything from bone fractures to cancer. Imaging devices such as X-ray and CT machines were used in 64 million emergency room (E.R.) visits alone in 2011—half of all visits that year.[31] These are standalone procedures relying almost entirely on taxable medical devices, the use of which makes up a sizeable portion of the total cost of a visit to the E.R.

BIPARTISAN SUPPORT FOR REPEALING THE MEDICAL DEVICE EXCISE TAX

The medical device tax is one issue for which critical views reach across the aisle. In fact, bipartisan support for repeal has grown in both the House and the Senate. On June 18th, 2015, the House passed the *Protect Medical Innovation Act of 2015*—a bill which would repeal the MDT. All voting

[27] Pauly, Mark V. and Lawton R. Burns, "Price Transparency for Medical Devices," *Health Affairs*, 27, no. 6 (2008): 1544-1553.
[28] Muir, Morgan A., Stephanie A. Alessi, and Jaime S. King, "Clarifying Costs: Can Increased Price Transparency Reduce healthcare Spending?" *William and Mary Policy Review* Vol. 4 (2013): http://www.wm.edu/as/publicpolicy/wm_policy_review/Archives/Volume%204%20Issue%202/MuirAlessiKing_s13f.pdf
[29] Claxton, Gary, Cythia Cox, and Matthew Rae, "The Cost of Care with Marketplace Coverage," The Henry J. Kaiser Family Foundation, February 11, 2015: http://kff.org/health-costs/issue-brief/the-cost-of-care-with-marketplace-coverage/
[30] Riffkin (2014)
[31] Centers for Disease Control and Prevention, "National Hospital Ambulatory Medical Care Survey: 2011 Emergency Department Summary Tables," November 2014: http://www.cdc.gov/nchs/data/ahcd/nhamcs_emergency/2011_ed_web_tables.pdf

Republicans voted for the bill and the 'yeas' also included 46 Democrats,[32] which comprises roughly one-quarter of the House Democratic Caucus.[33] Bipartisan votes for passage came from individuals representing states across the political spectrum, from California to Texas to New York. In all, Democrats from 18 states voted in favor of repeal.[34]

Bipartisan sentiment is not solely contained in the House. In 2013, the Senate voted 79-20 in support of an amendment introduced by Sens. Orrin Hatch (R-UT) and Amy Klobuchar (D-MN) to the Fiscal Year 2014 Budget Resolution calling for repeal of the MDT.[35] Senator Hatch, the Chairman of the Senate Finance Committee, introduced bipartisan legislation in January 2015 that would repeal the tax.[36, 37]

Joint Economic Committee Chairman and Senate Finance Committee member Dan Coats helped make the case for repeal:

> "Since its implementation, the tax has hurt employers and resulted in canceled plant expansions. Rather than encourage medical innovation for health care consumers, it is limiting research and development of life-enhancing and lifesaving devices."[38]

Soon thereafter, Democratic Senator Chuck Schumer voiced his support for repeal, citing the tax's negative effect on jobs and bipartisan support:

> "I'm for repealing the device tax because it hurts jobs here in the [upstate New York] area. It hurts jobs in other parts of New York state…I'm very optimistic we can get some kind of repeal."[39]

CONCLUSION

The Affordable Care Act included the medical device tax for one reason: to raise revenue. It is through this myopic lens that supporters of the law view their arguments against repeal, offering

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[32] 41 Democrat representatives co-sponsored the legislation.
[33] United States House of Representatives, Office of the Clerk, Final Vote Results for Roll Call 375, The question on passage of H.R. 160, the Protect Medical Innovation Act, June 18, 2015: http://clerk.house.gov/evs/2015/roll375.xml
[34] House Vote #375, 114th Congress, H.R. 160: Protect Medical Innovation Act of 2015, GovTrack.us: https://www.govtrack.us/congress/votes/114-2015/h375
[35] United States Senate, Office of the Clerk, Final Vote Results for Vote No. 47, The question on passage of Amendment No. 297, March 21, 2013: http://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=113&session=1&vote=00047
[36] United States Senate Committee on Finance, "Hatch, Bipartisan Group of Senators Announce Legislation to End Tax on Medical Device Manufacturers," Press Release, January 13, 2015: http://www.finance.senate.gov/newsroom/chairman/release/?id=924610df-3737-4379-af27-6b3a28869e9e
[37] Republicans introducing the legislation were Sens. Coats (IN), Hatch (UT), Toomey (PA), Burr (NC), and Portman (OH). Democrat supporters were Sens. Franken (MN), Klobuchar (MN), Donnelly (IN), Casey (PA), and Shaheen (NH).
[38] Office of Senator Dan Coats, "Coats, Bipartisan Group Announce Legislation to End Medical Device Tax," Press Releases, January 13, 2015: http://www.coats.senate.gov/newsroom/press/release/coats-bipartisan-group-announce-legislation-to-end-medical-device-tax
[39] Glans Falls Post-Star, "Schumer supports repealing medical device tax," PostStar.com, February 17, 2015: http://poststar.com/blogs/all_politics_is_local/schumer-supports-repealing-medical-device-tax/article_10a6d188-b6e8-11e4-a669-4fab458a9e61.html

arguments that suffer from flaws in logic, a misunderstanding of economics, or a misrepresentation of facts.

The authors of the Affordable Care Act either failed to see or simply tossed aside a myriad of negative consequences which were bound to result from the law. The tax on medical devices has onerous implications on individual health outcomes as much as it does on businesses. From restricting consumer choice to deferring investment in innovation, consequences of the MDT promise to harm the healthcare industry and its consumers for years to come.