

**FROM COAL MINING TO DATA MINING: PERSPECTIVES ON EXCESS PROFITS TAX IN  
THE DIGITALISED ECONOMY<sup>1</sup>**

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**ABSTRACT**

This paper takes a fresh look at the excess profits tax by testing the relevance of this old tax to new monopolies arising in the increasingly digitalised global economy. The media is full of stories of the phenomenal success and profitability of Apple, Amazon, and Google. The market capitalisation of Apple exceeding US\$ trillion gained international attention. With the growth of income inequality, many governments are also looking for ways to make their tax policies more equitable and create a fairer playing field for all businesses. An excess profits tax could improve the equity of taxation but at the expense of economic efficiency and innovation. Based on an examination of countries' experience with excess profits taxes during the war and in peacetime, and drawing on insights from taxation of excess profits in extractive industries, this paper discusses the potential for an excess profits tax to be applied in the digitalised global economy.

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<sup>1</sup> This is a preliminary draft of a conference paper to be presented at the Australasian Tax Teachers Association Annual Conference 2019 'Tax, Innovation and Education: Tax in a Changing World' (the Curtin Law School, Perth, Australia).

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“Still more objectionable is the operation of the excess profits tax in peacetime. It encourages wasteful expenditure, puts a premium on overcapitalization and a penalty on brains, energy and enterprise, discourages new ventures, and confirms old ventures in their monopolies” (Carter Glass, Secretary of the Treasury (US), *Annual Report for the Fiscal Year Ending 30 June 1919*, 23)

“As it stands, nearly half of all e-commerce passes through Amazon, while Facebook controls 77% of mobile social traffic and Google has 81% of the search engine market. What is their incentive to keep behaving well as they grow increasingly monopolistic?” (Cherry Reynard, ‘Have Big Tech Companies Become the Bad Guys?’, *The Forbes*, 28 February 2018)

## I INTRODUCTION

On 2 August 2018 Apple made stock market history by becoming the first U.S. company with a market value of US\$ trillion.<sup>3</sup> Apple has since lost more than 20 percent of its value but is still the world’s largest company by market capitalisation, followed by Amazon.com, Alphabet (Google), Microsoft and Facebook.<sup>4</sup> These digital firms have been enjoying the benefits of the digitalisation of the global economy. However, these firms acquire an unfair share of these benefits and create a number of economic and social problems.<sup>5</sup>

It is generally believed that all these firms generate excess profits (also known as ‘supernormal profit’, ‘abnormal profit’, ‘economic rent’ or ‘pure profit’).<sup>6</sup> Excess profit is an amount that exceeds the opportunity costs and the minimum rate of return to capital.<sup>7</sup>

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<sup>3</sup> Kevin Kelleher, ‘As the Stock Market Closes, Apple Is Officially the First Trillion-Dollar US Company’, *The Fortune* (2 August 2018), <<http://fortune.com/2018/08/02/apple-trillion-dollar-stock-price/>>.

<sup>4</sup> ‘The 100 Largest Companies in the World by Market Value in 2018 (in Billion US Dollars)’, *Statista* <<https://www.statista.com/statistics/263264/top-companies-in-the-world-by-market-value/>>.

<sup>5</sup> For a detailed account of economic and social ‘sins’ of major data miners see Andrew Keen, *The Internet is Not the Answer* (Atlantic Books, 2015).

<sup>6</sup> See these definitions in John Black, Nigar Hashimzade, and Gareth Myles (eds), *A Dictionary of Economics* (Oxford University Press, 5 edn, 2017, online version).

<sup>7</sup> IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 5. See also ‘supernormal profit’ and ‘excess profit’ in John Black, Nigar Hashimzade, and Gareth Myles (eds), *A Dictionary of Economics* (Oxford University Press, 5 edn, 2017, online version).

These excess profits may result from ownership of fixed or limited resources such as land or non-renewable natural resources (so-called ‘Ricardian rent’),<sup>8</sup> ownership of unique intangible assets,<sup>9</sup> or synergies.<sup>10</sup> Many opportunities for generation of excess profits are available to digital firms.<sup>11</sup>

Corporate taxation relies on accounting definition of profit, which is the ‘total revenue minus costs properly chargeable against the goods sold’.<sup>12</sup> This definition does not distinguish between excess profit and normal profit which covers only the opportunity costs and the minimum rate of return to capital.<sup>13</sup>

When profits are excessive, they sometimes should be subject to supra-normal tax. This is fair, in particular, because the ability to pay principle dictates that those who earn more should pay more.<sup>14</sup>

Supra-normal taxation of excess profits has no impact on normal profits and, for that reason, can be seen as economically efficient because it would not usually alter taxpayers’ behaviour.

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<sup>8</sup> This rent exists when natural resources are non-renewable and, therefore, fixed in supply. See David Ricardo, *On the Principles of Political Economy and Taxation* (John Murray 1st edn, 1817) 49-76. See also ‘rent, economic’ in Paul A Samuelson, William D. Nordhaus, *Economics* (McGraw-Hill-Education-Europe, 19th edn, 2011) Glossary of Terms, 673.

<sup>9</sup> Margaret Peteraf, ‘The Cornerstone of Competitive Advantage’ (1993) 14 *Strategic Management Journal* 179, 179 - 191.

<sup>10</sup> For instance, group synergy rents arising because of ‘combined purchasing power or economies of scale, combined and integrated computer and communication systems, integrated management, elimination of duplication, increased borrowing capacity, and numerous similar factors’. See OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (OECD Publishing, 10 July 2017) 89-90 [1.157].

<sup>11</sup> However, these opportunities rarely (if at all) are related to Ricardian rent. See discussion in section IV B (1a) of this paper.

<sup>12</sup> See ‘profits’ and ‘income statement’ in Paul A Samuelson, William D Nordhaus, *Economics* (McGraw-Hill-Education-Europe, 19th edn, 2011) Glossary of Terms, 664 and 671.

<sup>13</sup> See ‘normal profit’ in John Black, Nigar Hashimzade, and Gareth Myles (eds), *A Dictionary of Economics* (Oxford University Press, 5 edn, 2017, online version).

<sup>14</sup> This principle rests on the ability to pay theory (also known as the sacrifice theory or economic capacity theory). For more detail about this theory see, for instance, Peter Harris, *Corporate/Shareholder Income Taxation and Allocating Taxing Rights Between Countries* (IBFD, 1996) 14-27; Klaus Vogel, ‘The Justification for Taxation: A Forgotten Question’ (1988) 33 *American Journal of Jurisprudence* 19, 19; Richard A Musgrave, *The Theory of Public Finance: A Study in Public Economy* (McGraw-Hill, 1959), 62.

In some industries, economic rents associated with excess profits are captured through progressive income tax, the excess profits tax (EPT) or royalties.<sup>15</sup> One example of these industries is ‘extractive industries’.<sup>16</sup> There are also non-tax instruments that allow governments to divert the economic rents of some businesses to the public.<sup>17</sup>

Similar to firms in extractive industries that mine resources from the Earth (‘natural resource extractors’) many digital firms mine the Web<sup>18</sup> to find valuable data. These firms can, therefore, be referred to as ‘data miners’.<sup>19</sup>

In many countries natural resource extractors pay an ‘excess profits tax’ (the ‘EPT’).<sup>20</sup> This, however, is not the case for data miners. Governments all over the world are trying to increase the tax burden of large digital firms through income tax, withholding income tax, turnover taxes, the diverted profits tax (the ‘DPT’) or the excise tax on digital services (e.g. the digital service tax - the ‘DST’).<sup>21</sup> None of these taxes directly targets the economic rents earned by digital firms. An EPT, which is the only tax that applies solely to the

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<sup>15</sup> For instance, in the mining industry, ‘[w]ith a progressive tax, when the magnitude of annual profits (net income) or prices goes up, the tax rate goes up. The rate increase may be tied to a progressive corporate income tax (such as in the United States and Venezuela) or to a royalty where the royalty rate is linked to the commodity price (such as in Mongolia)’. See James M Otto, ‘The Taxation of Extractive Industries’ (WIDER Working Paper No 2017/75, March 2017) 13, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

<sup>16</sup> In the context of this paper the ‘extractive industry’ is a broad concept that includes all industries where profits is generated from the extraction (mining) of non-renewable resources such as oil, gas, minerals and some other natural resources.

<sup>17</sup> For instance, in the mining industry the economic rent can be captured through the auctioning of rights to exploration and development, production sharing agreements, or equity participation. For detail see Philip Daniel, Michael Keen, and Charles McPherson (eds), *The Taxation of Petroleum and Minerals: Principles, Problems and Practice* (Routledge, 2010).

<sup>18</sup> The Web (also known as the World Wide Web, WWW, or W3) is a network of digital information (data) located on the Internet servers. See ‘Web’ in John Daintith and Edmund Wright (eds), *A Dictionary of Computing* (Oxford University Press, 6th edn, online version 2014). See also Donna L Hoffman, Tomas P Novak and Patrali Chatterjee, ‘Commercial Scenarios for the Web: Opportunities and Challenges’ (1995) 1(3) *Journal of Computer-Mediated Communication* <<http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.1995.tb00165.x/full>>.

<sup>19</sup> ‘Data mining’ is ‘[t]he process of extracting useful information from a disparate collection of databases, files, and other sources such as Web pages.[...] Data mining software often uses some artificial intelligence technology and quite a lot of statistical theory’. See ‘data mining’ in Darrel Ince, *A Dictionary of the Internet* (Oxford University Press, 2 edn, 2009).

<sup>20</sup> The EPT may have different names (e.g. a ‘munition levy’ or ‘windfall tax’). For more detail see section II of this article.

<sup>21</sup> See OECD, ‘Tax Challenges Arising from Digitalisation’, *BEPS Interim Report* (OECD Publishing, 16 March 2018), Chapter 4.

economic rent,<sup>22</sup> has not yet been proposed or applied in response to the tax challenges of the digitalisation of global economy. It is despite an ability of the EPT to tax excess profits at “up to 100 percent without making the activity privately unprofitable”.<sup>23</sup>

This paper analyses prospects of the development of a EPT for digital firms that rely on data mining in their business models. This analysis is based on evaluation of arguments and counterarguments found in the tax literature on historical experience with the EPTs and their application in extractive industries.

This paper is structured as follows. Section II of this article contains a brief overview of history of excess profits taxes and the EPT in the extractive industries. Section III summarises the arguments related to the use of this specific instrument to capture the excess profits. This analysis is applied in section IV of this article, which discusses merits of the EPT for digital firms and makes some recommendations about this tax design.

## II BACKGROUND

### *A Brief Historical Overview of Excess Profits Taxes*

The taxation of excess profits was triggered by war. The first EPT is believed has been introduced in 1863 during the American Civil War by the state of Georgia.<sup>24</sup> Following the outbreak of the First World War, the EPT has become a world phenomenon. The war profits tax (WPT), which soon evolved into an EPT, was first introduced in 1915 in Denmark and Sweden,<sup>25</sup> and then the United Kingdom.<sup>26</sup> The tax quickly spread to many

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<sup>22</sup> The names of taxes do not always match their design. For instance, windfall profit tax enacted by the *Crude Oil Windfall Profit Tax Act 1980* (Public Law 96-223) (US) was in fact an excise tax. This tax was imposed on American oil producers and applied to the difference between the market price of oil (‘the removal price’) and a statutorily set 1979 base price that was adjusted quarterly for inflation and some state taxes. See Salvatore Lazzari, ‘The Crude Oil Windfall Profit Tax of the 1980s: Implications for Current Energy Policy’ in Maria B. Coswell (ed), *The Oil Industry and Windfall Profits* (Nova Science Publishers, 2006) 3 and 7-9. See also Michael S Knoll, ‘The Crude Oil Windfall Profit Tax of 1980: An Economic Analysis of its Effect on Domestic Crude Oil Production’ (1997) 9(2) *Resources and Energy* 163, 166-169.

<sup>23</sup> IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 9 [6].

<sup>24</sup> This tax applied to business profits in excess of 8% of capital stock. See Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 39.

<sup>25</sup> For more detail see Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 285.

<sup>26</sup> “The excess profits duty, which was first imposed by the Finance (No. 2) Act, 1915, was charged on the excess profits of businesses which were either carried on in the United Kingdom or carried on abroad and owned by persons residing in the United Kingdom. The duty extended to all classes of business, including agency, with the following exceptions, viz.: (a) husbandry in the United Kingdom, (b) offices

other countries, including Australia, Canada, New Zealand, South Africa, France, Italy and the United States.<sup>27</sup> In this period some countries also introduced a specific type of EPT – the munition levy on the excess profits tax of some military suppliers.<sup>28</sup> The EPT and the munition levy were repealed shortly after the First World War but re-introduced again in some countries during the Second World War<sup>29</sup> and the Korean War.<sup>30</sup>

During the First World War, there were two distinct types of the EPT: taxes on war profits and the so-called ‘windfall tax’. The distinction was based on the standards applied for the measurement of normal profit. The tax on war profits ‘was levied upon profits arising during or after the war in excess of a standard representing the profits or average profits

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or employments, (c) professions, and (d) commercial travellers. The duty was charged upon profits, in excess of a pre-war standard of profits, arising in an accounting period”: Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 37.

For detailed explanation of a design and administration of the excess profits tax imposed during the First World War in the United Kingdom see Mark Billings and Lynne Oats, ‘Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War’ (2014) 24(2-3) *Accounting History Review* 83, 89 – 97. See also Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 287-288.

<sup>27</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 36.

*Excess-profits Tax Act of 3 March 1917* (US); *War Excess-profits Tax Act of 3 October 1917* (US); *War-profits and Excess-Profits Tax Act of 24 February 1919* (US). For a brief overview of these acts see Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 39.

For detailed explanation of excess profit tax introduced during the First World War in the United States see Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 288-291.

Some discussion of excess profit taxes introduced during the First World War in Denmark, Sweden and Germany can be found in Mark Billings and Lynne Oats, ‘Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War’ (2014) 24(2-3) *Accounting History Review* 83, at 86.

<sup>28</sup> For instance, *Munitions of War Act 1915* (UK) and *Munitions of War Act 1916* (UK).

<sup>29</sup> For instance, *Second Revenue Act 1940* (US) (also known as ‘the first Excess Profits Tax Act”).

The tax was imposed at progressive rates of income, after adjustments, in excess of a specific exemption of \$5,000 and an excess profit credit. The credit was either 95% of 1936-1939 earnings or 8% of invested capital up to \$5 mln and 7% on the balance, whichever was the greater. See Dan Throop Smith and Myles Mace, ‘Tax Uncertainties in Corporate Financing’ (1942) 20(3) *Harvard Business Review* 315, 324. See also Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, 445 - 466.

<sup>30</sup> In the United States Korean War excess profits tax was introduced by *Excess Profits Tax Act 1950* (US). This tax applied only to war profits. For more detail see William B Paul, ‘Excess Profits Tax’ (1952) 27(1) *Accounting Review* 44. See also George R Donnell (1951) 26(3) *Accounting Review* 384.

of a period prior to the war'.<sup>31</sup> The windfall tax was a tax on profits in excess of a prescribed return on capital.<sup>32</sup> Both types of excess profits tax 'were charged in respect of the profits of trading concerns as such rather than of individuals', while 'the amount payable was determined [...] by reference to its profits in excess of a certain standard, ascertained separately in each case on a prescribed basis'.<sup>33</sup> When the tax on war profits was re-introduced during the Second World War, both types of excess profits tax were applied in some countries.<sup>34</sup>

It has been said that the EPT is a tax for extreme circumstances, such as war.<sup>35</sup> This belief, however, has faded over time. The first EPTs proved to be a good source of revenue. These taxes did not alter business behaviour and usually were seen as fair taxes.<sup>36</sup> This positive experience has, to some extent, encouraged some governments to use the EPT in the peacetime to capture economic rent generated in some industries (the gas and oil

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<sup>31</sup> Gerald Bain Canny and Thomas Sewall Adams, 'Excess Profits Duty and Tax' in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 36.

<sup>32</sup> Gerald Bain Canny and Thomas Sewall Adams, 'Excess Profits Duty and Tax' in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 36.

<sup>33</sup> Gerald Bain Canny and Thomas Sewall Adams, 'Excess Profits Duty and Tax' in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 36.

<sup>34</sup> For instance, *Second Revenue Act of 1940* (US) used two methods for establishing the excess profits tax credit: the invested capital method and the average income method based on prior earnings. See George Douglas, 'Excess Profits Taxation and the Taxpayer' (1943) 10 (1) *Law and Contemporary Problems* 140, at 145-146.

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<sup>35</sup> Gerald Bain Canny and Thomas Sewall Adams, 'Excess Profits Duty and Tax' in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 38; Carl C Plehn, 'War Profits and Excess Profits Taxes' (1920) 10(2) *The American Economic Review* 283, 284 and 298.

<sup>36</sup> For more detail see section III A of this paper.

industry,<sup>37</sup> the coal-mining industry,<sup>38</sup> the utilities industry)<sup>39</sup> or in specific circumstances.<sup>40</sup>

In wartime, the EPT was a transitory tax levied on ‘unearned, abnormal and undesirable’<sup>41</sup> profits which were neither the result of direct government action, nor a capital gain.<sup>42</sup> In peacetime, the EPT is not necessarily a transitory tax. It is a tax on profits above a statutory defined standard or tax on ‘assumed excessivity’.<sup>43</sup>

An EPT may have several economic implications. The tax can be designed to capture any economic rent or only a specific type of rent. The EPT can be a source of revenue or an

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<sup>37</sup> See, for instance, Australia, Petroleum Resource Rent Tax Assessment Act 1987, No. 142. In Australia the Petroleum Resource Rent Tax (PRRT) is imposed on the taxable profit of a petroleum project that is located ‘offshore’. See also John McLaren and John Passant, ‘The Mineral Resource Rent Tax has Been Repealed: Is It Now Time For a Better-Designed Resource Rent Tax on All Extracted Minerals And Gas?’ (2015) 10 (1) *Journal of the Australasian Tax Teachers Association* 87, 96-97.

<sup>38</sup> See, for instance, the coal-mines excess payments imposed in the United Kingdom by the Coal Mines Control Agreement (Confirmation) Act of 1918, and the coal levy imposed by the Coal-Mines Emergency Acts of 1920 and 1921. See: Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 39. For an overview of excess profits taxes in the mining industry of some countries see John McLaren and John Passant, ‘The Mineral Resource Rent Tax has Been Repealed: Is It Now Time For a Better-Designed Resource Rent Tax on All Extracted Minerals And Gas?’ (2015) 10 (1) *Journal of the Australasian Tax Teachers Association* 87, 94-96.

<sup>39</sup> For instance, Norway levies an EPT on power plants and electricity suppliers. See Ministry of Petroleum and Energy, Norwegian Government, ‘Taxation of the Power Sector’ <<https://energifaktanorge.no/en/regulation-of-the-energy-sector/skattlegging-av-kraftsektoren/>>; see also Norway, ‘Nordenergi WG Taxes and Levies’ (Nordic Tax Report 2013: Electricity Sector, March 2014), 7 [3] <<http://www.energiuutiset.fi/media/energiuutiset/ uutiset/2014/sk-14-nordenergi-tax-2013.pdf>>.

<sup>40</sup> For instance, the United Kingdom’s windfall tax of a one-time 23% tax levied on what were claimed to be ‘the excess profits of the privatised utilities’. See HM Treasury, United Kingdom Government, 1997 *Budget* <<https://web.archive.org/web/20120414064658/http://archive.treasury.gov.uk/pub/html/budget97/ir1.html>>.

This tax was introduced in 1997 after the United Kingdom Government privatised more than 50 government-owned companies between 1979 and 1997. These companies were widely believed to have been sold too cheaply. The tax was applied to the difference between the price at which a utility company was sold when privatised (the flotation value) and that at which this company should have been sold based on their profitability after privatisation (the notional price). The notional price was determined by a formula based on the company’s profits during the four-year period immediately following privatisation. For more detail see Beth Y Vermeer and Brian R Greenstein, ‘Unresolved Issues Regarding the US Foreign Tax Credit: A Case of the United Kingdom Windfall Tax’ (2014) 12(2) *ATA Journal of Legal Tax Research* 1, 3-4.

<sup>41</sup> Plehn has differentiated ‘abnormal’ from ‘unexpected but normal’ (e.g. profits from winning a lottery) and suggested excess profits are ‘undesirable’ because they earned unfairly. See Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 283-284.

<sup>42</sup> Ibid.

<sup>43</sup> For more detail see Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 294.

instrument for the control of monopoly power of some firms, or both. The EPT can stimulate innovations or kill businesses highly dependent on innovations. The next part of this section provides a brief overview of the application of an EPT in the extractive industries.

### ***B Excess Profits Tax in the Extractive Industries***

The core business activities of extractive businesses are exploration and the extraction of non-renewable natural resources. These resources are fixed in supply. The supply comes from the Earth. Therefore, a process of exploration and extraction of non-renewable resources has a particular geographical location. When extracted these resources become a commodity – that is, ‘raw or in-process materials used by a wide array of entities, ranging from large manufacturers who transform commodities into other products to individuals who may consume the commodity either directly or indirectly through a manufactured good’.<sup>44</sup> The profitability of an extractive business, and its ability to generate excess profits, depends on commodity prices, the costs of extraction (including supply-side economies) and often on the possession of monopoly position which exists because exclusive rights to extract or use particular natural resources.

The first EPT on profits from mining activities was levied in the United Kingdom in 1920.<sup>45</sup> Nowadays many countries where the extraction of non-renewable natural resources such as oil, gas, and minerals takes place have an EPT.<sup>46</sup> The use of this tax in the extractive industries is increasing.<sup>47</sup>

Contemporary versions of the EPT applied in the extractive industries are either rate-of-

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<sup>44</sup> Erik Devos, ‘Physical Commodities’ in H Kent Baker, Greg Filbeck, and Jeffrey H Harris (eds), *Commodities: Markets, Performance, and Strategies* (Oxford University Press, 2018) 112.

<sup>45</sup> *Coal-Mines Emergency Act 1920* (UK).

<sup>46</sup> For more detail see IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 20. See also James M Otto, ‘The Taxation of Extractive Industries’ (WIDER Working Paper No 2017/75, March 2017) 1 and 12, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>; John McLaren and John Passant, ‘The Mineral Resource Rent Tax Has Been Repealed: Is It Now Time for a Better-Designed Resource Rent Tax on All Extracted Minerals and Gas?’ (2015) 10 (1) *Journal of the Australasian Tax Teachers Association* 87, 94-97; Bertrand Laporte, Céline De Quatrebarbes, and Yannick Bouterige, ‘Mining Taxation in Africa: The Gold Mining Industry in 14 Countries from 1980 to 2015’ (Études et Documents, No. 13, CERDI, June 2017), <<https://halshs.archives-ouvertes.fr/halshs-01545361/document>>.

<sup>47</sup> IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 21 [35].

return based, or profitability-ratio based.<sup>48</sup> A rate-of-return based EPT ('Brown Tax' or 'R-based cash flow tax') is usually triggered when the rate-of-return exceeds 20 or 25 percent.<sup>49</sup> Its tax base usually includes:

[...] all current receipts less all current expenses (both non-financial), with immediate refund (or carry forward at interest) when this is negative. Accounting and tax depreciation do not feature—all capital is immediately expensed—and there are no deductions for interest or other financial costs.<sup>50</sup>

The profitability-ratio based EPT is premised on the ratio of profits to costs in the current tax year. This mechanism applies in so-called 'Allowance for Corporate Equity' ('ACE') and 'Allowance for Corporate Capital' ('ACC') schemes.<sup>51</sup> Under this type of EPT, the tax base is usually either gross sales revenues or a statutorily defined operating income.<sup>52</sup>

The profitability-ratio based EPT requires earlier tax payments than the rate-of-return based EPT.<sup>53</sup> For both types of EPT 'a key and contentious issue [...] is the choice of imputed rate of return (for carry forward under the Brown Tax and for capital costs under the ACE/ACC').<sup>54</sup>

An EPT in extractive industries is highly vulnerable to political processes, which are in turn linked to the business cycle in the extractive industries.<sup>55</sup> When commodity prices are high, countries try to adjust their tax systems to capture the excess profits in this

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<sup>48</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 12, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>. For a brief overview of economic rent taxation in mining industries see IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 24.

<sup>49</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 13, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

<sup>50</sup> IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 20.

<sup>51</sup> For more detail on ACE and ACC schemes see IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 20.

<sup>52</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 13, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

<sup>53</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 13, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

<sup>54</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 13, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

<sup>55</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 12, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

industries. Most of these profits are Ricardian rents.<sup>56</sup> A fall of commodity prices and the rise of the extraction costs often reduce or entirely eliminate the economic rent of extractive businesses. If the design of an EPT does not take into account changing profitability, the tax is usually has a short life.<sup>57</sup> If not repealed, the EPT can make many firms operating in the extractive industries suffer and reduce the scope of their operations.

In extractive industries, the EPT is an element of a complex tax system that is designed to extract revenue from taxation of normal profits and economic rents. In this view the EPT is ‘an administrative adjunct’<sup>58</sup> to corporate income tax and royalties. According to International Monetary Fund (IMF), a combination of corporate income tax, a modest ad valorem royalty and an EPT has considerable appeal for countries with extractive industries.<sup>59</sup> A royalty ensures some revenue whenever production is positive; corporate income tax ensures taxation of the normal return at corporate level and availability of foreign tax credits; and the EPT ‘exploits the distinct revenue potential [of the extractive businesses]’.<sup>60</sup>

### III PROS AND CONS OF THE EXCESS PROFITS TAX

This section summarises arguments in support and against introduction of the EPT found in the tax and economic literature relevant to the data mining industry.

#### *A Pros of the Excess Profits Tax*

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<sup>56</sup> Ross Garnaut and Anthony Clunies Ross, *Taxation of Mineral Rents* (Clarendon Press 1983) 33-35.

<sup>57</sup> For instance, Australia imposed its excess profits tax on mining firms (the ‘resource rent tax’) when the super-cycle became apparent but repealed it shortly thereafter when prices dropped. James M Otto, ‘The Taxation of Extractive Industries’ (WIDER Working Paper No 2017/75, March 2017) 1 and 12, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>. See generally ‘Australia’s Future Tax System’ (AFTS Report to the Treasurer, December 2009), Chapter 12, recommendation 45, <[http://taxreview.treasury.gov.au/content/finalreport.aspx?doc=html/publications/papers/final\\_report\\_part\\_1/chapter\\_12.htm](http://taxreview.treasury.gov.au/content/finalreport.aspx?doc=html/publications/papers/final_report_part_1/chapter_12.htm)>.

<sup>58</sup> Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, 466.

<sup>59</sup> IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 25 [48].

<sup>60</sup> IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 25 [48].

First, the EPT is an additional source of revenue.<sup>61</sup> Second, this tax is a fair tax. It prevents both profiteering<sup>62</sup> and making money from misfortune caused by extreme circumstances such as war<sup>63</sup> or from the use of monopoly power.<sup>64</sup> The tax may also be fair when it returns to society a portion of business profits from extraction or use of publicly owned natural resources or non-renewable resources that part of common heritage of mankind.<sup>65</sup> The EPT also protects domestic businesses (when this tax is levied on foreign companies),<sup>66</sup> and levels the playing field between firms by reducing

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<sup>61</sup> Gerald Bain Canny and Thomas Sewall Adams, 'Excess Profits Duty and Tax' in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 36. See also George Douglas, 'Excess Profits Taxation and the Taxpayer' (1943) 10 (1) *Law and Contemporary Problems* 140, 140; William B Paul, 'Excess Profits Tax' (1952) 27(1) *Accounting Review* 44, 44; Mark Billings and Lynne Oats, 'Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War' (2014) 24(2-3) *Accounting History Review* 83, 84.

<sup>62</sup> Mark Billings and Lynne Oats, 'Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War' (2014) 24(2-3) *Accounting History Review* 83, 84 and 98; Carl C Plehn, 'War Profits and Excess Profits Taxes' (1920) 10(2) *The American Economic Review* 283, 283.

<sup>63</sup> See Gerald Bain Canny and Thomas Sewall Adams, 'Excess Profits Duty and Tax' in *The Encyclopaedia Britannica*, Vol. XXXI (London, 12th edn, 1922) 39. See also Clifford J Hynning, 'The Excess-Profits Tax of 1940: A Critique' (1941) 8(3) *The University of Chicago Law Review* 441, 466; George Douglas, 'Excess Profits Taxation and the Taxpayer' (1943) 10 (1) *Law and Contemporary Problems* 140, 140; William B Paul, 'Excess Profits Tax' (1952) 27(1) *Accounting Review* 44, 44; Mark Billings and Lynne Oats, 'Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War' (2014) 24(2-3) *Accounting History Review* 83,87.

<sup>64</sup> For instance, high energy prices and so-called 'fuel poverty' was one of the driving forces behind discussions about taxation of excess profits of energy companies in the United Kingdom in 2008 and 2013. See 'Ministers "Consider" Windfall Tax', *BBC News* online, 1 August 2008, <[http://news.bbc.co.uk/2/hi/uk\\_news/politics/7536814.stm](http://news.bbc.co.uk/2/hi/uk_news/politics/7536814.stm)>. See also 'Sir John Major Calls for Windfall Tax on Energy Profits', *BBC News* online, 22 October 2013, <<https://www.bbc.com/news/uk-politics-24621391>>.

The United Kingdom has not levied an excess profits tax on energy companies. By contrast, Norway levies excess profits tax on its power plants and electricity suppliers. See Ministry of Petroleum and Energy, Norwegian Government, 'Taxation of the Power Sector' <<https://energifaktanorge.no/en/regulation-of-the-energy-sector/skattlegging-av-kraftsektoren/>>; see also Norway, 'Nordenergi WG Taxes and Levies' (Nordic Tax Report 2013: Electricity Sector, March 2014), 7 [3] <<http://www.energiuutiset.fi/media/energiuutiset/uutiset/2014/sk-14-nordenergi-tax-2013.pdf>>.

The 'major bank levy' on banks with over AUS \$100 billion in total liabilities is another example of taxation of economic rent. The levy was introduced by the Australian Parliament in its the *Major Bank Levy Bill 2017* and the *Treasury Laws Amendment (Major Bank Levy) Bill 2017*. The levy applies from 1 July 2017.

<sup>65</sup> IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 14 [16]. See also Ross Garnaut and Anthony Clunies Ross, *Taxation of Mineral Rents* (Clarendon Press 1983) 18.

<sup>66</sup> IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 10. See also Ross Garnaut and Anthony Clunies Ross, *Taxation of Mineral Rents* (Clarendon Press 1983) 18.

monopoly profits.<sup>67</sup> Third, the EPT is economically efficient. Excess profit is ‘a surplus of income that can theoretically be taken away from an investor without altering its economic behaviour’.<sup>68</sup> For that reason the EPT is usually seen as a generally better alternative to corporate income tax.<sup>69</sup> The latter is often criticised because its distorting effects.<sup>70</sup> Finally, the EPT is an administratively efficient tax, in particular because taxpayers often willingly comply with their EPT liability. In wartime, despite high rates of the EPT, after-tax profits of some businesses were higher than in a pre-war period.<sup>71</sup> To remain military contractors or otherwise secure a profit-generating opportunity, businesses preferred to pay the EPT. This economic motive was strongly supported by a moral concerns and patriotism.<sup>72</sup> Administrative efficiency of the EPT is also linked to relatively simple business models and a low mobility of businesses operating in some industries (e.g. the extractive industries and the ‘renewable energy industry’).<sup>73</sup>

### ***B Cons of the Excess Profits Tax***

Arguments against excess profits taxes are either general or specific to the design of particular EPTs.

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<sup>67</sup> Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, at 466.

<sup>68</sup> When applied in the extractive industries the EPT does not alter economic behaviour because natural resources are fixed in supply and immobile geographically. James M Otto, ‘The Taxation of Extractive Industries’ (WIDER Working Paper No 2017/75, March 2017) 1, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>. See also Ross Garnaut and Anthony Clunies Ross, *Taxation of Mineral Rents* (Clarendon Press 1983) 18; Robin Boadway and Michael Keen, ‘Rent Taxes and Royalties in Designing Fiscal Regimes for Non-Renewable Resources’ (CESifo Working Paper No. 4568, January 2014) 4.

<sup>69</sup> ‘A high [corporate income tax] CIT rate, for instance, can discourage investment by increasing the required pre-tax return; a tax on rents does not. The CIT is also biased toward debt-financing, since (with rare exceptions) interest is deductible whereas the cost of equity capital is not’. See IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 19 [34].

<sup>70</sup> For detailed discussion on distorting effects of corporate income taxation see OECD ‘Fundamental Reform of Corporate Income Tax’ (Tax Policy Studies 16, 2007) 58-72. See also OECD, ‘Tax Policy Reform and Economic Growth’ (OECD Publishing 2010) 22.

<sup>71</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 40.

<sup>72</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 38. George Douglas, ‘Excess Profits Taxation and the Taxpayer’ (1943) 10 (1) *Law and Contemporary Problems* 140, 140 and 143.

<sup>73</sup> In the context of this article the ‘renewable energy industry’ is an industry comprised by power plants. Power plants generate energy from use of water, sun, wind and other natural renewable resources.

## 1 General arguments

First, the EPT is a complex tax,<sup>74</sup> because it is difficult to define<sup>75</sup> and to measure the relevant tax base.<sup>76</sup> Sometimes profits that seem to be ‘excess profits’ are the result of hyperinflation<sup>77</sup> or a normal growth of a business. Prices can fluctuate over different tax periods, which makes it difficult to measure excess profits. Moreover, any retrospective method applied to measure the excess profits will protect old monopolies. For that reason, the excess profits tax is sometimes seen as a tax discouraging start-ups.<sup>78</sup> Second, the EPT is a discriminatory tax because it applies to some but not all businesses.<sup>79</sup> Third, the EPT discourages production<sup>80</sup> and innovation.<sup>81</sup> Fourth, the EPT encourages

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<sup>74</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 40. See also George Douglas, ‘Excess Profits Taxation and the Taxpayer’ (1943) 10 (1) *Law and Contemporary Problems* 140, 141 and 145; Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, 442; Mark Billings and Lynne Oats, ‘Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War’ (2014) 24(2-3) *Accounting History Review* 83, 84.

<sup>75</sup> Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 292-293.

<sup>76</sup> Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, 462. See also Salvatore Lazzari, ‘The Crude Oil Windfall Profit Tax of the 1980s: Implications for Current Energy Policy’ in Maria B. Coswell (ed), *The Oil Industry and Windfall Profits* (Nova Science Publishers, 2006) 32.

<sup>77</sup> This argument has been made in relation to excess profits tax introduced during the First World War in the United Kingdom and the United States. See Mark Billings and Lynne Oats, ‘Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War’ (2014) 24(2-3) *Accounting History Review* 83, 98 and Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 293-294.

<sup>78</sup> George Douglas, ‘Excess Profits Taxation and the Taxpayer’ (1943) 10 (1) *Law and Contemporary Problems* 140, 142. See also Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, 443-444, 468. See also see Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 285.

<sup>79</sup> In this case the EPT discriminates businesses that are subject to this tax. Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 38 and 40. See also Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, at 442-445, 464-465; Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 296.

<sup>80</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 39; Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 297.

<sup>81</sup> George Douglas, ‘Excess Profits Taxation and the Taxpayer’ (1943) 10 (1) *Law and Contemporary Problems* 140, 147.

‘wasteful’ and ‘extravagant’ expenditure to reduce pre-tax profits,<sup>82</sup> and tax evasion.<sup>83</sup> Finally, the EPT may result in a price increase by passing the incidence of this tax on consumers of products.<sup>84</sup>

## 2 Design-specific arguments

First, the EPT is unfair when it does not allow offsetting all earlier losses<sup>85</sup> or allows group loss offset.<sup>86</sup> Second, the EPT is inefficient if it applies to profits only from some activities,<sup>87</sup> or ignores special circumstances when more than a standard ‘normal profit’ is required to keep business running<sup>88</sup> or be attractive for investment.<sup>89</sup> When the standard to be met before excess profits are taxed exempts invested capital, the EPT is inefficient because it encourages overcapitalisation of businesses<sup>90</sup> and creates an incentive to retain profits within the firm rather than distributing it to shareholders.<sup>91</sup> Third, the EPT may discourage foreign investment, if the tax is levied only on foreign firms.<sup>92</sup> Vice versa, if it is levied only on domestic firms, excess profits tax may reduce

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<sup>82</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 39-40.

<sup>83</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 39.

<sup>84</sup> Long ago Friday disproved this claim. See David Friday, ‘Prices and Excess Profits Taxes’ (1920) 89 *The Annals of the American Academy of Political and Social Science* 163, 163.

<sup>85</sup> Robin Boadway and Michael Keen, ‘Rent Taxes and Royalties in Designing Fiscal Regimes for Non-Renewable Resources’ (CESifo Working Paper No. 4568, January 2014) 39.

<sup>86</sup> In the offset was available the EPT discriminates would against stand-alone firms. Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, 463.

<sup>87</sup> In this case investors might shift their focus to activities that are not subject to the tax. See Henry Ergas, ‘Taxation of the mining industry’ (Economics Society of the ACT, 8 September 2010).

<sup>88</sup> Carl C Plehn, ‘War Profits and Excess Profits Taxes’ (1920) 10(2) *The American Economic Review* 283, 292-293.

<sup>89</sup> For instance, without differentiation in the tax treatment of high-risk and low risk projects, investments in high-risk project could reduce. See Henry Ergas, Mark Harrison and Jonathan Pincus, ‘Some Economics of Mining Taxation’ (2010) 29(4) *Economic Papers* 369, 378.

<sup>90</sup> Gerald Bain Canny and Thomas Sewall Adams, ‘Excess Profits Duty and Tax’ in *The Encyclopaedia Britannica* (London, 12th edn, 1922) vol 28, 40.

<sup>91</sup> Clifford J Hynning, ‘The Excess-Profits Tax of 1940: A Critique’ (1941) 8(3) *The University of Chicago Law Review* 441, 461-462. See also George Douglas, ‘Excess Profits Taxation and the Taxpayer’ (1943) 10 (1) *Law and Contemporary Problems* 140, 142 and 146.

<sup>92</sup> ‘Ministers “Consider” Windfall Tax’, *BBC News* online (1 August 2008) <[http://news.bbc.co.uk/2/hi/uk\\_news/politics/7536814.stm](http://news.bbc.co.uk/2/hi/uk_news/politics/7536814.stm)>.

domestic production and supply.<sup>93</sup> Finally, depending on its design the EPT may delay revenue for government.<sup>94</sup>

#### IV EXCESS PROFITS TAX FOR DIGITAL FIRMS

This section examines the possibility for a development of the EPT for digital firms. It first provides a brief overview of data mining businesses.

##### *A Data Mining Businesses*

All data miners extract data from the Web, which is a layer of the Internet infrastructure. The Internet infrastructure is a combination of software and hardware developed and operating under common protocols and standards, effectively as a single system. This system is global because it includes hardware located in almost all countries.<sup>95</sup> The global structure of the Internet makes data mining businesses in some sense non-territorial. Combined with intangible nature of business activities and products of data miners, and open access to electronic networks in many countries, the Internet provides these businesses with opportunities to mine data in many countries and sell this data or digital services to customers in around the world.

Data is a capital good, which is non-rivalrous in consumption. This good, in theory, can be used simultaneously by many economic actors for the production of an unlimited number of goods and services.<sup>96</sup> Data, once collected, can be replicated at almost no cost. With a growing volume of digital information produced by people and smart devices and stored on the Web (so-called 'big data'),<sup>97</sup> the supply of data seems almost unlimited. Data mining is one of the most dynamic, fastest growing segments of the IT industry. The global

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<sup>93</sup> Salvatore Lazzari, 'The Crude Oil Windfall Profit Tax of the 1980s: Implications for Current Energy Policy' in Maria B. Coswell (ed), *The Oil Industry and Windfall Profits* (Nova Science Publishers, 2006) 19-20.

<sup>94</sup> It occurs, for instance, when the EPT is based on the rate-of-return-based mechanism. For more detail see section II B of this paper. See also IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 21 [35].

<sup>95</sup> See World Bank, 'Secure Internet Servers' <<https://data.worldbank.org/indicator/IT.NET.SECR>>; World Bank, 'Individuals Using the Internet (% of Population)' <<https://data.worldbank.org/indicator/IT.NET.USER.ZS>>.

<sup>96</sup> OECD, 'Data-Driven Innovation: Big Data for Growth and Well-Being' (OECD Publishing, 6 October 2015) 181-182. See also OECD, 'A Manual on Measurement of Capital Stocks, Consumption of Fixed Capital and Capital Services', (OECD Publishing, 2001) 91.

<sup>97</sup> OECD, 'Exploring Data-Driven Innovation as a New Source of Growth: Mapping the Policy Issues Raised by "Big Data"' (OECD Digital Economy Papers No 222, 2013) 4.

market for big data technology and services reached \$21.19 billion in 2017 and is expected to be up to \$77.58 billion by 2023.<sup>98</sup> These features make data mining seem less like natural resource extraction.

Data extracted from the Web is, however, a commodity. Data miners either sell this data, or use it to produce digital services or improve operation of their own web platforms.<sup>99</sup> For instance, one of the major data miners – Google – sells personalised Internet advertising services<sup>100</sup> and analytical services to its customers.<sup>101</sup> To produce these services Google needs data about people that can be targeted by personalised ads. Google also needs these people to interact on or with Google’s web platforms. Through these interactions Google collects personal data and delivers personalised ads. In encouraging and facilitating interactions on its web platform, Google involves own customers in a value creation process.

Google can get personal data in three different ways. First, Google provides free services through its web search and social platforms and collects data from or about users of these free services. Second, Google may acquire (at a price) personal data from data collecting agencies and operators of data exchange platforms. Finally, Google may (but does not necessarily) request that third party web publishers that are members of the Google ad network to install tracking software on Internet browsers or on the electronic devices belonging to the Internet users who visit websites of these web publishers.

Google is both a data miner and a ‘platform firm’.<sup>102</sup> A platform firm produces multiple digital services simultaneously, facilitates interactions of own customers on or through

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<sup>98</sup> Rick Whiting, ‘2018 Big Data 100 List’ (*The Computer Reseller News*, 1 May 2018) <<https://www.crn.com/news/applications-os/300102856/the-2018-big-data-100.htm>>.

<sup>99</sup> For detail about 100 largest data mining companies and their specialisation see Rick Whiting, ‘2018 Big Data 100 List’ (*Computer Reseller News*, 1 May 2018) <<https://www.crn.com/news/applications-os/300102856/the-2018-big-data-100.htm>>.

<sup>100</sup> ‘Personalised’ or ‘interactive’ advertising is a type of Internet advertising when advertisements are displayed to Internet users who meet certain targeting criteria defined by an advertiser. For more detail see Avi Goldfarb and Catherine Tucker, ‘Online Advertising’ in Marvin V Zelkowitz (ed), *Advances in Computers* (Academic Press 2011) vol 81, 289-315.

<sup>101</sup> For instance, Google Analytics 360 a paid service that provides insights into how users engage with business online and offline. See ‘Analytics’ in Google Glossary <[https://support.google.com/analytics/answer/7390017?hl=en&ref\\_topic=6083659](https://support.google.com/analytics/answer/7390017?hl=en&ref_topic=6083659)>.

<sup>102</sup> Mark Fenwick, Joseph A McCahery, and Erik P M Vermeulen, ‘The End of “Corporate” Governance: Hello “Platform” Governance’ (Lex Research Topics in Corporate Law & Economics Working Paper No 2018-5, 16 August 2018) 7-8.

its own web platform and organises its business activities in such a way that the customers of one service will attract customers for another service produced by the firm.<sup>103</sup> This organisation of a business is known as a ‘multisided market’. In a multisided market customers are divided in two or more distinct groups (demand-side and supply-side customers),<sup>104</sup> which allows the platform firm to create value primarily by enabling direct interactions between these distinct types of customers.<sup>105</sup>

Not all data miners are platform firms. However, many large data miners are platform firms. A platform structure of a business allows these data miners reduce the cost of production not only through supply-side economies but also through demand-side economies discussed further.

The profitability of data miners and their ability to generate excess profits, depends on their ability to access and analyse large volumes of data located on the Web and sell these data or data-based digital services to their clients. These firms often have high fixed cost of production but their marginal costs of production are usually low.<sup>106</sup>

When data miners produce multiple digital services, these firms reduce their costs of production through supply-side economies of scale and scope. When data miners receive resources from own customers but do not bear the full costs of these resources, data miners reduce their costs of production through demand-side economies.

It is very rare when data miners pay Internet users for data these users leave on the Web. There is no market price for data inputs, therefore, payments for data inputs may not cover the costs of these inputs to Internet users. Data miners that are platform firms also bear no costs of network effects. These effects are seen as a ‘free fruit’ that platform firms

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<sup>103</sup> See David S Evans and Richard Schmalensee, *Matchmakers: The New Economics of Multisided Platforms* (Harvard Business Review Press, 2016). See also Avi Goldfarb, Catherine Tucker, ‘Digital Economics’ (NBER Working Paper No 23684 August 2017) 13 and Jean-Charles Rochet and Jean Tirole, ‘Platform Competition in Two-sided Markets’ (2003) 1(4) *Journal of the European Economic Association* 990.

<sup>104</sup> Jean-Charles Rochet and Jean Tirole, ‘Platform Competition in Two-sided Markets’ (2003) 1(4) *Journal of the European Economic Association* 990.

<sup>105</sup> Andrei Hagiu and Julian Wright ‘Multi-Sided Platforms’ (Working Paper No 12-024, Harvard Business School, 12 October 2011) 7.

<sup>106</sup> Hal R Varian, Joseph Farrell and Carl Shapiro (eds), *The Economics of Information Technology: An Introduction* (Cambridge University Press, 2004) 25.

The marginal cost is the extra cost (or the increase in total cost) required to produce one extra unit of output (or the reduction in total cost from producing one unit less). See ‘cost, marginal’ in Paul A Samuelson, William D Nordhaus, *Economics* (McGraw-Hill-Education-Europe, 19th edn, 2011) Glossary of Terms, 652.

enjoy naturally. Unpaid or low paid data inputs and network effects allow digital miners to reduce the costs of production of their digital services through demand-side economies.

Large data miners are multinational firms. Returns of multinational firms are greater because of the greater scale of economies available to and utilised by these firms.

The combination of a platform structure of business, high fixed costs and low-marginal costs, diversity of products offered to customers and strong network effects, have contributed to the market power of the largest platform firms and features akin to a natural monopoly. When a network of the firm's customers spans territories of many countries, this firm is, to a great extent, a global monopoly. The presence of market power is evidenced by the antitrust challenges these firms have faced in recent years, most notably the two multi-billion Euro penalties imposed on Google by the European Commission.<sup>107</sup>

In sum, excess profits of data miners come from their monopoly power, freeriding on customers valuable inputs and networks effects, and supply-side economies. Monopoly power is not uncommon in many industries, while customer participation in the value creation process of a firm is a unique feature of data mining firms that have structured their businesses as a platform.

### ***B Evaluation of Arguments in Support of the Excess Profits Tax***

The discussion in this section revolves around three broad arguments: fairness, allocation efficiency and administrative efficiency of the EPT. All these arguments to greater or lesser extent are based on a view of the EPT as an additional source of revenue.<sup>108</sup>

#### *1 Fairness*

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<sup>107</sup> See European Commission, 'Antitrust: Commission Fines Google €4.34 Billion for Illegal Practices Regarding Android Mobile Devices to Strengthen Dominance of Google's Search Engine', *Press Release* (Brussels, 18 July 2018) <[http://europa.eu/rapid/press-release\\_IP-18-4581\\_en.htm](http://europa.eu/rapid/press-release_IP-18-4581_en.htm)>; European Commission, 'Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service' *Press Release* (Brussels, 27 June 2017) <[http://europa.eu/rapid/press-release\\_IP-17-1784\\_en.htm](http://europa.eu/rapid/press-release_IP-17-1784_en.htm)>.

<sup>108</sup> See section III A of this paper.

A fairness argument comprises separate sub-arguments.<sup>109</sup> This paper analyses each of them in turn.

#### *a Profiteering*

Profiteering results from scarcity of resources and products. There is anything but shortage of data supply in the digitalised global economy where the Web 2.0 and Web 3.0 business models stimulate constant flow of data from people and smart devices. It is expected that the world will “reach 44 zettabytes by 2020 – ten times the total volume of data in 2013”.<sup>110</sup>

Even if the shortage of some data would occur, and some commentators suggest new machine learning will require access to vast amounts of data, it would be hard to profiteer from it, especially if digital service that require this data are for entertainment purposes (e.g. video services or photo exchanges web platforms) or substitutes for either face-to-face communication (e.g. social network web platforms) or other services (e.g. Internet advertising substitutes advertising in non-digital media; services of social web platforms substitute communication via exchange of mails or phone calls). Therefore, an argument about profiteering may not be irrelevant for a discussion of the EPT for digital firms because this argument concerns Ricardian rents which are rare in digital businesses.

#### *b Misfortune*

The issue of misfortune or harm caused by the digitalisation of the global economy is highly controversial. For many digitalisation is a driver of the economic growth. For instance, according to McKinsey Global Institute fifteen years after the commercialisation of the Internet it has generated as much economic growth as the Industrial Revolution did in fifty years.<sup>111</sup> However, harmful effects on people and businesses of the ‘winner-take-it all’ economy that have emerged as a result of the commercialisation of the Internet cannot be ignored.

Data mining, which is at the heart of the digitalised economy, creates many harmful

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<sup>109</sup> See section III A of this paper.

<sup>110</sup> Rick Whiting, ‘2018 Big Data 100 List’ (*The Computer Reseller News*, 1 May 2018) <<https://www.crn.com/news/applications-os/300102856/the-2018-big-data-100.htm>>.

<sup>111</sup> ‘Internet Matters: The Net’s Sweeping Impact on Growth, Jobs, and Prosperity’, (Executive Summary, McKinsey Global Institute, May 2011) 3 <[http://www.mckinsey.com/insights/high\\_tech\\_telecoms\\_internet/internet\\_matters](http://www.mckinsey.com/insights/high_tech_telecoms_internet/internet_matters)>.

effects. For many people, data miners are violators of privacy and intellectual property rights, designers of a culture of ‘narcissists and voyeurists’, job killers, disruptors of democracy, and assistants to the government spy apparatus.<sup>112</sup> At the same time, many people are happy with positive effects of data mining, such as search engines and many free information services. It appears that people have been willing to click away their privacy in exchange for free email and Internet searches.

The harms created by digital technology cannot be cured by a EPT, which might simply reduce the benefits to society from these technologies,<sup>113</sup> but should be addressed directly through appropriate regulation.

*c Monopoly power*

Some digital firms have grown so big<sup>114</sup> that their main shareholders can be said to have “wealth and power beyond anything that the barons of the late nineteenth century could have dreamed”.<sup>115</sup> Monopolisation of a market is, by definition, bad for competition. There are concerns that digital giants treat their customers and employees poorly (or may start doing so), because of the dominant positions that have in their markets.<sup>116</sup>

An EPT for digital firms could be designed to constrain the exercise of monopoly power of large digital firms. Reduced monopoly power will level up the playing field for small

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<sup>112</sup> See Andrew Keen, *The Internet is Not the Answer* (Atlantic Books, 2015). See also Kurt Wagner, ‘Here’s How Facebook Allowed Cambridge Analytica to Get Data for 50 Million Users: Facebook Says It Isn’t at Fault’, *Readcode*, 17 March 2018, <<https://www.recode.net/2018/3/17/17134072/facebook-cambridge-analytica-trump-explained-user-data>>; Yasha Levine, ‘Google’s Earth: How the Tech Giant is Helping the State Spy on Us’, *The Guardian* online, 20 December 2018, <<https://www.theguardian.com/news/2018/dec/20/googles-earth-how-the-tech-giant-is-helping-the-state-spy-on-us>>.

<sup>113</sup> For instance, the EPT imposed on platform firms that provide access to online games may reduce opportunities of these firms to invent or acquire new games. However, this reduction will not cure gaming addiction that some players might have developed.

<sup>114</sup> According to ZenithOptimedia Google (Alphabet) and Facebook alone have accounted for almost two-thirds of global growth in revenues from Internet advertising since 2012. See ZenithOptimedia, ‘Google and Facebook Now Control 20% of Global Adspend’, blog post of 2 May 2017, <<https://www.zenithmedia.com/google-facebook-now-control-20-global-adspend/>>.

<sup>115</sup> Joseph E Stiglitz, *Freefall: America, Free Markets, and the Sinking of the World Economy* (W W Norton & Co 2010) at 205.

<sup>116</sup> Cherry Reynard, ‘Have Big Tech Companies Become the Bad Guys?’, *The Forbes* online, 28 February 2018, <<https://www.forbes.com/sites/cherryreynard/2018/02/28/have-big-tech-companies-become-the-bad-guys/#56dfb1c9724a>>. See also ‘How to Tame the Tech Titans’, *The Economist* online, 28 January 2018, <<https://www.economist.com/leaders/2018/01/18/how-to-tame-the-tech-titans>>. See also Andrew Keen, *The Internet is Not the Answer* (Atlantic Books, 2015), 49-50.

firms and start-ups and may result in a better treatment of customers and employees of digital firms.

The EPT levied on large digital firms may encourage them to change their pricing models and start paying own customers for their participation in a value creation process. These changes might, in turn, help large digital firms to reduce their EPT liability. At the same time, if customers of large digital firms are paid for their data inputs, states where these customers are could potentially collect more income tax from these customers.

#### *d Returns to society*

Data is not publicly owned non-renewable resource or part of common heritage of mankind. Therefore, a resource-related argument applied to justify an EPT levied in the extractive industries<sup>117</sup> is not relevant to the EPT for digital firms. However, society may have other reasons to claim a portion of the excess profits of digital firms. This claim, in particular, can be premised on one or all following facts. First, large digital firms are similar to natural monopolies. Their monopoly position is based on supply- and demand-side economies and protected through national systems of intellectual property (IP) rights. Often digital firms that have a monopoly position, use IP rights as an instrument against innovative activities of own competitors rather than for production of products based on protected IP rights.

Second, the Internet is a global public good,<sup>118</sup> which digital firms use without paying adequate (or any) compensation to states for the efforts these states have made in creation and maintenance of this global good. Digital technology reduces at least five distinct economic costs associated with supply side of business activities of digital firms: search costs; replication costs; transportation costs; tracking costs, and verification costs.<sup>119</sup> Digital technology is what makes the economy 'digital' or 'digitalised'. The digital economy exist because of an invention and commercialisation of the Internet followed by its transformation into a global network. The Internet is a global public good developed

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<sup>117</sup> IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 14 [16].

<sup>118</sup> Inge Kaul and Ronald U Mendoza, 'Advancing the Concept of Public Goods' in Inge Kaul (ed), *Providing Global Public Goods: Managing Globalization* (Oxford University Press, 2003) 100.

<sup>119</sup> For more detail see Avi Goldfarb, Catherine Tucker, 'Digital Economics' (NBER Working Paper No 23684, August 2017) 6-42.

with a participation of many states.<sup>120</sup> This ‘network of networks’ is a global marketplace for any sorts of products and a place of production of digital services. This multi-functionality and non-territoriality of the Internet results from support of all (or almost all) states that have entered in many international agreements.<sup>121</sup> Therefore, it is fair to suggest that digital firms should return to global society a portion of the excess profits they derive because of the digitalisation of the global economy. In principle, this idea can be extended to normal profits and also to firms that use the Internet to facilitate own sales of traditional goods and services (which nowadays means all firms that have online presence). This discussion, however, is beyond of the topic of this paper.

Third, the customers of many digital firms participate in the value creation process of these firms,<sup>122</sup> without receiving adequate, or sometimes any, compensation for the costs of this participation. When digital firms involve their customers in a value creation process, individually or collectively (as a network), but do not pay these customers for their valuable inputs (or pay an amount that does not compensate to customers the costs of their inputs), it is fair to suggest these firms should return to the society where these customers are members (or where these customers made their data inputs) a portion of these firms’ profits earned from these activities.

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<sup>120</sup> Originally developed for a non-commercial purpose, with the immense support of the United States, the states of the European Union, international institutions and private investors, the Internet has grown into a global information infrastructure that links servers and electronic devices all over the world to provide the technical infrastructure of the global digital economy. For more detail see Dan Schiller, *Digital Capitalism: Networking the Global Market System* (MIT Press, 1999) 13-88. See also Barry M Leiner, Vinton G Cerf, David D Clark, Robert E Kahn, Leonard Kleinrock, Daniel C Lynch, Jon Postel, Larry G Roberts and Stephen Wolff, ‘Brief History of the Internet’ <<http://www.internetsociety.org/internet/what-internet/history-internet/brief-history-internet#JCRL62>>; <http://tenyears-www.web.cern.ch/tenyears-www/Story/WelcomeStory.html>; Andrew Keen, *The Internet is Not the Answer* (Atlantic Books, 2015), 27-30, 37-38, 162, 230-234.

<sup>121</sup> Trade and investment agreements have reduced barriers to international trade in goods, services and capital, enhanced the protection of intellectual property, and more recently promoted freedom of movement for data. See, for instance, UNCITRAL *Model Law on Electronic Commerce* (12 June 1996) with additional art 5 *bis* as adopted in 1998 (New York, 1999); UN, *Convention on the Use of Electronic Communications in International Contracts* (New York, 2005); *Trans-Pacific Partnership Agreement* (signed in Auckland on 4 February 2016, not yet in force), chapter 14.

<sup>122</sup> Many states have agreed that users of digital services provided by platform firms through their web platforms participate in value creating process of these firms. See OECD, ‘Tax Challenges Arising from Digitalisation’, *BEPS Interim Report* (OECD Publishing, 16 March 2018), Chapter 2 [37- 39]. See also Ministry of Finance, French Government, *Rapport sur la fiscalité du secteur numérique* (18 January 2013) (the ‘Colin and Collin Report’); HM Treasury, United Kingdom Government, ‘Corporate Tax and the Digital Economy’, *Position Paper Update* (13 March 2018) [2.29]; Treasury, Australian Government, ‘The Digital Economy and Australia’s Corporate Tax System’, *Treasury Discussion Paper* (October 2018) 18.

### *e Protectionism*

Protectionism is a highly controversial ground for taxation or nontaxation of firms.

The idea that the EPT should be levied on foreign digital firms to protect domestic businesses<sup>123</sup> may appeal to some people since the United States and the United Kingdom, the main architects of the post-1945 order, “appear to be pioneers in the reverse direction – steering an erratic, inconsistent, and domestically controversial course away from multilateralism”.<sup>124</sup> It is, however, unclear, why firms in general should be able to benefit from a global public good, such as the Internet, but not pay for its use. Moreover, taxation of foreign digital firms may disincentivise foreign investments.

Therefore in sum, only sub-arguments about a limitation of monopoly power and returns to society can provide a strong moral justification for the EPT for digital firms.

### *2 Allocation efficiency*

From a perspective of allocation efficiency, the EPT could be an efficient tax if it does not alter taxpayer’s behaviour.<sup>125</sup> It is true when the EPT is applied to stand-alone firms or multinational firms that use predominantly immobile resources in their production process. Multinational digital firms operate in the global economic and technological environment and use many intangible resources (data, algorithms, etc.) in their production process. These resources are generally highly mobile. A combination of this mobility, with the separate entity approach to taxation of multinationals and the ability of digital firms to access foreign markets via the Internet, poses challenges for the efficiency of any tax that has profit (normal, excess or both) as its tax base. If a multinational digital firm is treated as a set of independent tax payers, this firm can place its mobile resources in a low or no-tax jurisdiction and, thereby, increase its after-tax profits. This firm, however, cannot choose a tax-smart location for data provided by people and smart devices. This is because these people and devices have a physical location and this location is not controlled by the firm. Consequently, all things being equal, an EPT may have only some impact on the allocation choices of a multinational

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<sup>123</sup> IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 10.

<sup>124</sup> Harold James, ‘Bretton Woods to Brexit’ (2017) 54 (3) *Finance and Development* 4, 5.

<sup>125</sup> See section III A of this paper.

digital firm in relation to location of mobile resources. This impact, however, will not exist if an EPT would be based on a single entity approach under which the worldwide excess profits of a multinational digital firm would be apportioned only between states that have the EPT.<sup>126</sup>

### ***C Evaluation of Arguments against the Excess Profits Tax***

This sub-section of the paper is built upon an analysis of general arguments against the EPT summarised in section III (B) of this article as tax complexity, tax discrimination, productive and innovative inefficiency, tax avoidance, and price increase. The tax design related arguments<sup>127</sup> are incorporated in recommendations made in the final part of this section.

#### *1. Tax complexity*

The EPT is a complex tax because it requires both the delineation of excess and normal profits, and the accurate measurement of excess profits. Because its complexity, the EPT is best suited to states with a strong, well-funded and educated tax authority.<sup>128</sup> There is evidence that otherwise an EPT tends to disappear from the national tax system as a result of political pressure and lobbying.<sup>129</sup> Insight from the extractive industries suggests the administration of an EPT should be not much harder than the administration of royalties.<sup>130</sup> New accounting and calculation approaches and the education of tax authorities help to administer this tax.<sup>131</sup> This insight can be useful for designing an EPT for digital firms.

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<sup>126</sup> See discussion in the next subsection.

<sup>127</sup> *Ibid.*

<sup>128</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 13, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

<sup>129</sup> For instance, studies of gold mining industry in fourteen African countries have found that a resource rent tax (a tax levied on excess profits) has remained only in Ghana, Guinea, Côte d'Ivoire and Zimbabwe have a resource rent tax. See Bertrand Laporte, Céline De Quatrebarbes, and Yannick Bouterige, 'Mining Taxation in Africa: The Gold Mining Industry in 14 Countries from 1980 to 2015' (Études et Documents, No 13, CERDI, June 2017) 16, <<https://halshs.archives-ouvertes.fr/halshs-01545361/document>>.

<sup>130</sup> IMF, Fiscal Affairs Department, 'Fiscal Regimes for Extractive Industries: Design and Implementation' (15 August 2012) 30 [54]. See also Robin Boadway and Michael Keen, 'Rent Taxes and Royalties in Designing Fiscal Regimes for Non-Renewable Resources' (CESifo Working Paper No 4568, January 2014) 2.

<sup>131</sup> James M Otto, 'The Taxation of Extractive Industries' (WIDER Working Paper No 2017/75, March 2017) 13, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>. See also Robin Boadway and

The EPT for large digital firms is also a complex tax because large digital firms are generally multinationals. These multinationals generate excess profits and exercise their monopoly power in a non-territorial economic environment created as a result of liberalisation of many national economies, along with the invention and commercialisation of the Internet. Consequently, monopoly power of large digital firms could be effectively constrained by an EPT and revenue from this tax could be collected only if all the major states where these firms operate would introduce an EPT. Otherwise, this tax could be avoided through cross-border profit shifting similar to corporate income tax.

To be effective, efficient and fair an EPT for large digital firms should be levied in a framework of an ‘international EPT system’ premised on the single entity approach to taxation of cross-border excess profits of large multinational digital firms. If these firms are treated as single economic units with EPT liabilities in many states, the double taxation of excess profits would not occur. To prevent the double taxation of excess profits an EPT should be coordinated with national corporate tax systems. The international EPT system premised on the single entity approach will help to avoid problems similar to those that currently exist in the international corporate system because of its reliance on the separate entity approach to taxation of cross-border business profits.<sup>132</sup>

International tax organisations such as the OECD and the UN could help states to develop an international EPT system for large digital firms, suggest a model for the EPT and guide states on the implementation of the tax. This assistance would help to harmonise the EPT legislation of different states and, therefore, to reduce the costs of EPT administration and compliance. The number of firms subject to the EPT would be relatively modest. It will ease the administration of the EPT system.

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Michael Keen, ‘Rent Taxes and Royalties in Designing Fiscal Regimes for Non-Renewable Resources’ (CESifo Working Paper No 4568, January 2014), 5 and 15.

<sup>132</sup> Under the separate entity approach, states where legal entities or permanent establishments (PEs) of a multinational firm are located, apply their own laws to these entities and treat them for tax purposes as if they are separate and independent enterprises. See OECD *Model Tax Convention on Income and on Capital*. Full Version (OECD Publishing, 21 November 2017), art 9; UN *Model Double Taxation Convention between Developed and Developing Countries* (UN Publishing, 2017), art 9. See also Reuven S Avi-Yonah, ‘National Regulation of Multinational Enterprises: An Essay on Comity, Extraterritoriality, and Harmonization (The Regulation of Foreign Direct Investment)’ (2003) 42 *Columbia Journal of Transnational Law* 5, 8.

Complexity of the EPT creates a risk of administrative inefficiency of this tax. Administrative efficiency depends on the costs of tax administration, enforcement and compliance. The EPT, unless it is a part of the international EPT system premised on the single entity approach, may be an administratively inefficient tax. There will be no moral drivers for EPT compliance but many opportunities to avoid this tax. It is because the EPT is a complex tax and it will be levied on multinational digital firms that operate in the global economic and technological environment, use many mobile resources and produce products that are both intangible and mobile. Tax compliance of digital firms with their EPT obligations will depend on each state's tax enforcement abilities and willingness of other states to assist in this matter. This dependence creates a risk that amounts of recovered tax revenue will not cover all costs of the EPT enforcement and administration and compliance costs.

### *2. Tax discrimination*

An EPT for large digital firms will be discriminatory because it will be levied on some firms only. At the same time, the EPT would not be a discriminatory tax because it would be levied on all firms in a similar situation (e.g. on digital firms that would meet a particular threshold).

### *3. Productive and innovative inefficiency*

The EPT can reduce productive efficiency<sup>133</sup> and innovative efficiency<sup>134</sup> of digital firms and, therefore, become a 'killer tax' for these firms. The EPT like most of taxes levied on a firm can reduce a size of this firm's own capital and its ability to invest in improvements of its own operation processes and development of new products. The EPT levied on digital firms may not affect production of existing digital services but may discourage

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<sup>133</sup> Productive efficiency means either production of an output with the use of minimum inputs and production with a minimum loss. See David N Hyman, *Public Finance: A Contemporary Application of Theory to Policy* (Cengage Learning, 11th edn, 2014) 77-79.

Productive efficiency depends on production technology, the scale of operation, operating efficiency and the operating environment in which production occurs. See Harold O Fried, C A Knox Lovell and Shelton S Schmidt, *The Measurement of Productive Efficiency and Productivity Growth* (Oxford University Press, 2008) 7-8.

<sup>134</sup> Innovative efficiency results from entrepreneurial creativity, which concerns the economic application of new ideas leading to creation of new or modified products (product innovation), ways of making products (process innovation), or changes in business organisation (business process innovation). See Jesús Huerta de Soto, *The Theory of Dynamic Efficiency* (Routledge, 2008) 8. See also 'innovation' in John Black, Nigar Hashimzade and Gareth Myles (eds), *A Dictionary of Economics* (Oxford University Press 2017, 5th edn, online version 2017).

invention and production of new services that require substantial investments. For digital firms their innovative efficiency is a key for survival.<sup>135</sup> However, innovation will not be discouraged in competitive markets if only the firms that have achieved dominance of an industry, and now reap the benefits of massive supply-side economies and network effects which protects their market positions, that the firms will become subject to an EPT. In this case the EPT will simply prevent large digital firms from using excess profits to build a ‘moat’ around their monopoly positions.

#### *4. Tax avoidance*

If the profits of a firm are below the standard established for the excess profits, no EPT liability will result. Therefore, the EPT may encourage a digital firm to incur unnecessary expenditure and, therefore, to reduce its own pre-tax profits. However, a careful tax design (e.g. limitation of expenditure deductions) may mitigate opportunities for ‘wasteful expenditure’.

#### *5. Price increase*

The EPT may trigger a price increase of digital services only if a design of this tax would allow a digital firm to pass the EPT incidence on consumers of the firm’s services. The firm, however, may decide not to pass this incidence or to share it with its customers. As a result, there will no EPT-driven price increase or the increase will be lower than the cost of the EPT to the firm.

### **D Summary and Recommendations**

After evaluation of arguments and counterarguments for the EPT for digital firms it can be concluded that as a pure revenue raising instrument the EPT may not be worthy. If levied on all digital firms this tax could become one a tax that “encourages wasteful expenditure, puts a premium on overcapitalization and a penalty on brains, energy and enterprise, discourages new ventures, and confirms old ventures in their monopolies”.<sup>136</sup>

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<sup>135</sup> As Google puts it: ‘If we do not continue to innovate and provide products and services that are useful to users, we may not remain competitive, and our revenues and operating results could be adversely affected’. See Alphabet Inc, Annual Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Act of 1934 (form 10-K) for the Fiscal Year Ended on December 31, 2017, 10, <[https://abc.xyz/investor/static/pdf/20171231\\_alphabet\\_10K.pdf?cache=7ac82f7](https://abc.xyz/investor/static/pdf/20171231_alphabet_10K.pdf?cache=7ac82f7)>.

<sup>136</sup> This famous remark was made by Carter Glass, Secretary of the Treasury (US, in relation to the EPT levied in the United States during the First World War. See Treasury (US), *Annual Report for the Fiscal Year Ending 30 June 1919*, 23.

At the same time, the EPT for large multinational digital firms has strong moral grounds. The EPT would be efficient tax if it would be based on a generally accepted model and introduced as a part of the international EPT system, and if states would meaningfully assist each other in collection of EPT revenues and enforcement of tax claims related to this tax. Coherence between national EPT and corporate tax systems would be desirable to avoid economic double taxation of excess profits.

If international tax cooperation necessary for development of efficient EPT would not be possible, states may introduce the EPT unilaterally. This tax, therefore, will be solely premised on moral grounds. There is, however, a risk that unilaterally introduced EPT will be ineffective and inefficient. This tax also may result in juridical double taxation of excess profits. Each states' opportunity for unilateral introduction of the EPT depends on double tax agreements (DTAs) of this state and their interpretation. DTAs are usually apply not only to taxes on income and on capital, but also to 'identical or substantially similar taxes'.<sup>137</sup> The EPT is not an income tax. The sole relation of the EPT to income tax is that 'it uses a form of income as its tax base'.<sup>138</sup> This relation may or may not be considered as one that creates 'substantial similarity' between the EPT and income tax. If both taxes are similar, then DTAs will apply to the EPT levied on any excess profits form cross-border business activities. It means the taxing right of a state where multinational digital firm operates will be constrained by treaty rules, in particular, by the concept of permanent establishment. The current international corporate tax system is at odds with many businesses operating in the digitalised global economy. If the EPT is seen as a part of this system, the taxation of excess profits will inherit all problems of this system (i.e. nexus problems, unrecognition of customer participation in a value creation process of some digital firms, cross-border profit shifting).<sup>139</sup>

The EPT for large multinational digital firms can be the rate-of-return based or profitability-ratio based. The design of this tax should reflect specific nature of the economic rent of digital firms. The EPT premised on a separate entity approach should

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<sup>137</sup> *OECD Model Tax Convention on Income and on Capital*. Full Version (OECD Publishing, 21 November 2017).

<sup>138</sup> Carl C Plehn, 'War Profits and Excess Profits Taxes' (1920) 10(2) *The American Economic Review* 283, 284.

<sup>139</sup> OECD, 'Addressing the Tax Challenges of the Digital Economy', *Action 1: 2015 Final Report*, *OECD/G20 Base Erosion and Profit Shifting Project* (OECD Publishing, 5 October 2015). See also OECD, 'Tax Challenges Arising from Digitalisation', *BEPS Interim Report* (OECD Publishing, 16 March 2018).

not permit a loss to be offset within a group of companies. Otherwise this tax will discriminate

against stand-alone firms. The EPT should apply to excess profits from any business activity of a digital platform firm. This will help to prevent allocation inefficiency. The EPT should reflect the dependence of digital firms on innovation and not discourage innovation. These firms may need more after-tax profits than most of traditional businesses. The EPT should not encourage overcapitalisation of digital firms.<sup>140</sup> The EPT should not discriminate against foreign or local digital firms. If levied on all digital firms that derive excess profits in a state, the EPT will not disincentivise foreign investments and local production of digital services.

It may be difficult to design a good international EPT system for taxation of large multinational digital firms and incorporate the EPT – a key element of this system – into national tax systems of states. However, with the insight gained from extractive industries, it may be possible to avoid many problems of excess profits taxation through a careful tax design.<sup>141</sup>

The taxation of excess profits in extractive industries requires ‘a real-world balance that satisfies investors and society’.<sup>142</sup> The same is true for the IT industry. There is a huge demand from society and governments all over the world to collect more revenue from and to limit monopoly power of the large multinational digital firms. A carefully designed international EPT system can satisfy this demand without creating economic inefficiencies.

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<sup>140</sup> The overcapitalisation effect of the EPT may not, however, be significant. In their recent study Barger, Denis, and Lehn have found that even when a design of the EPT had bias in favour of equity financing, firms in need of external funds largely used debt financing. See Leonce Barger, David Denis, and Kenneth Lehn, ‘Financing Investment Spikes in the Years Surrounding World War I’ (2018) 130 (2) *Journal of Financial Economics* 215.

<sup>141</sup> For discussion of difficulties related to taxation of the excess profits in extractive industries see IMF, Fiscal Affairs Department, ‘Fiscal Regimes for Extractive Industries: Design and Implementation’ (15 August 2012) 9 [6] and 14 [16]. See also IMF, ‘From Stimulus to Consolidation: Revenue and Expenditure Policies in Advanced and Emerging Economies’ (2010) <[www.imf.org/external/np/pp/eng/2010/043010a.pdf](http://www.imf.org/external/np/pp/eng/2010/043010a.pdf)>; Robin Boadway and Michael Keen, ‘Rent Taxes and Royalties in Designing Fiscal Regimes for Non-Renewable Resources’, (CESifo Working Paper No 4568, January 2014).

<sup>142</sup> James M Otto, ‘The Taxation of Extractive Industries’ (WIDER Working Paper No 2017/75, March 2017) 1, <<https://www.wider.unu.edu/sites/default/files/wp2017-75.pdf>>.

Of course, the large multinational digital firms and their investors would need to be persuaded to accept this balance as a ‘satisfactory’ alternative to continuing to deal with unilateral tax creativity of states that may result in double taxation of business profits.<sup>143</sup>

## V CONCLUSION

This paper has analysed the case for the development of an EPT for digital firms that depend on the extraction of large volumes of data from the Web. After the evaluation of the arguments and counterarguments found in the tax literature on history of the EPT and its application in the extractive industries, this paper concluded that an EPT levied on all digital firms or levied unilaterally may not be a sensible option from equity and efficiency perspectives. At the same time, the EPT could be an instrument for limiting monopoly power of large multinational digital firms. This limitation is necessary to level up playing field in the digitalised global economy. Use of the EPT for this purpose requires international cooperation and the development of an international EPT system. This system should be based on a single entity approach to taxation of excess profits of multinational digital firms and the harmonisation of the national EPT legislation of the states where multinational digital firms operate.

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<sup>143</sup> For an overview of unilateral responses of countries to the tax challenges of digitalisation see OECD, ‘Tax Challenges Arising from Digitalisation’, *BEPS Interim Report* (OECD Publishing, 16 March 2018), chapter 4.