CHAPTER 13

Economic Controls 2: Currency and Fees

NEW CURRENCY CREATION

New currency creation holds promise as a vehicle for debt-free government investment and control of the money supply. As Chap. 11 discussed, the investment could take a variety of forms. Although new currency could be invested in government programs, it equally could be invested directly in citizens as basic income. The concept is astoundingly simple: create new money and give it in equal amounts to all people. Most versions of the basic income idea define ‘all people’ as every adult and child living within a monetary area who satisfy certain residency or citizenship requirements (Table 13.1).

This definition usually has implied that the money-issuing authority would be a national government and that the money in question would be the national currency as legal tender. Orrell and Chuplatý suggest instead that the government could issue a complementary currency. Additionally, a handful of privately funded basic income schemes have been piloted, such as in Oakland, California. Neither of these ideas is particularly compelling. A private scheme, when scaled up, would not achieve any public benefit if it were exclusionary. It would have to fund everybody. Yet it would offer no obvious return to a private funder, in contrast to a public one, which could be returned through taxes. If a private scheme issued a private currency, then that currency would have to be able to buy all the things the national currency could. The national currency is already accepted everywhere within national borders, and it is the currency the...
government uses to collect taxes. Issuing a private or complementary currency for basic income does not appear to offer any advantages over the national currency, whereas issuing it in the national currency offers clear advantages over a complementary currency. A national basic income scheme funded through the creation of national currency could lay the foundation for a future global one, if or when a global money-issuing authority were established. Within that framework, other private or complementary basic income schemes might be feasible.

Sovereign money creation would require the government to take back control of the public money on behalf of the public, precluding commercial banks from creating new public money as debt. Government expenditure would have a stimulative effect, putting people to work and placing money into their pockets as wages. Economic activity would grow, both on the supply side and on the demand side. Basic income, on the other hand, would stimulate only the demand side of the economy. Either way, the resulting economic growth would increase the economy’s material intensity in the absence of any countervailing improvements in material efficiency.

Sovereign money-funded basic income could be inflationary. For goods whose supply is relatively price-inelastic, an increase in demand for consumption would drive prices up. Could basic income become self-defeating if it raised prices proportionately? In a world of higher prices, would low-income people on basic income be just as poorly off as before?

The question cannot be considered in isolation. An economy on a pathway toward material efficiency would be different in several ways from the current economy. A much greater amount of production would come from the recirculation of material rather than from its extraction from nature. Other controls, such as taxes and incentives, would operate within
the economy to stimulate this change. It would result in a great deal of technological innovation which, it is fair to say, would release a significant amount of new latency in production. Therefore, production can be expected to be fairly elastic in response to increases in demand for consumption. Additionally, as discussed below, taxes on households would shift away from income onto material intensity. People living at or just above the basic income level would pay no income tax at all. However, prices on certain goods would be higher, depending on the material intensity of their production. One might expect food also to be pricier, although agricultural incentives could offset this effect.

Sovereign money creation can improve people’s net incomes in ways other than simply providing basic income. It also can pay for services used and needed by everyone, particularly healthcare and education, discussed later. If these services were taken as a public right, then it would become in the public interest to fund them through the creation of new public money. The removal of the costs of these services from household budgets amounts to an indirect form of additional income which, of course, would deliver the greatest benefit to those least able to pay for them.

Counterbalancing the inflationary effects of sovereign money creation is the removal of public money from circulation. This the government would accomplish through taxation, as Mellor and others have described. Having created new money, and placed it into the hands of the people, the government would recoup most of it after it has circulated within the economy. If basic income at a level of, say, $15,000 per year for every adult and child in the US were funded solely through sovereign money creation, then the money-issuing authority would have to issue roughly $4.5 trillion in new money each year. Most of this new money subsequently would have to be mopped up through taxation. It does not really matter what form of taxation the government used: the collection itself would have a deflationary effect. Any excess money not returned by tax would be a benefit to the economy as a whole.

Another related economic control to consider within this context pertains to income distributions. Basic income, at a stroke, would eliminate absolute poverty by bringing everyone up to a level at which needs are met and a minimum of personal dignity is assured. However, if incomes remain widely distributed and, in particular, the median income is many multiples of the basic income, then an upward pressure on consumption would be created. A prime directive of material discipline implies an increase in prosperity, as distinct from an increase in consumption. In the current economy, the two have become conflated: prosperity partly is a function of
consumption. However, as earlier chapters have argued, material consumption would be only one facet of prosperity in an economy operating for the purpose of material discipline. To the extent that prosperity becomes decoupled from consumption, the economy overall would have a greater chance of attaining the material efficiency required for long-term alignment with nature. For people, this translates into a sense of prosperity: of not feeling an urgent need to strive upward in material consumption to have a sense of belonging within society. It is itself a form of personal dignity. Leaving aside all the other non-material facets of prosperity, such as more time, better education and free healthcare, the sense of already belonging to society, even at or just above basic income, can be enhanced by establishing economic controls distributing incomes appropriately. It is perhaps less important for the upper tail of the income distribution to be brought down than for the median and mean incomes to be maintained within a few multiples of the basic one. This is not a matter of taxing middle incomes but of maintaining income tax rates on higher ones, possibly also instituting some form of elective redistribution scheme.

The combination of these various policies and controls would have to be modeled in detail to gain a clearer picture of where the gains and losses would lie. It is a rich seam for research. Sovereign money creation may be a feasible funding source for basic living, provided it is established as part of a suite of measures. However, for reasons discussed below, a basic living scheme might more feasibly be funded through corporate fees on commonly owned assets.

**COMMON CAPACITY FEES**

Table 13.2 indicates the approximate conformance of common capacity fees to the four principles of economic controls for a planetary economy. Common capacity fees are divided into artificial capacity fees and natural capacity fees.

**Table 13.2** Approximate conformance of common capacity fees to the four principles of economic controls for a planetary economy

| Principle                          | Conformance |
|------------------------------------|-------------|
| Material discipline                |             |
| Economic stability                 |             |
| Widespread prosperity              |             |
| Innovation through markets         |             |

Source: Author’s creation

Note: Darker shading denotes relatively greater conformance
Artificial Capacity Fees

Peter Barnes’ proposal to charge corporations small fees to use commonly owned assets, introduced in Chap. 8, was made for the purpose of paying a dividend to individuals as a form of basic income. Barnes provides some rough estimates of the scale of the annual income that these fees could generate in the US for selected assets, summarized in Table 13.3.

All these assets constitute types of capacity. Because they are commonly owned, the fees charged on them may be called common capacity fees.

The transaction fees for use of financial infrastructure are defined by Barnes as payable by an asset owner on a trade made less than one year since the previous trade. A possible refinement to this fee structure could account for differences in temporality between different kinds of financial assets. Derivatives, for instance, tend to trade over much shorter intervals than stocks and bonds. A progressive fee structure, although not as simple, would be more finely tuned to the properties of the assets in question, as Table 13.4 suggests.

Although the fees themselves would be small, this progressive structure would discourage short-term speculation, particularly in derivatives, and would encourage longer-term investment. The fees would have to be modeled and trialed before they could be implemented, of course, so as to arrive at workable values. According to The Money Project, the world’s 60 major

| Asset                              | Mechanism                  | Rate  | Estimated total |
|------------------------------------|----------------------------|-------|-----------------|
| Air                               | Tradable permits          |       | $198 billion    |
| Financial infrastructure          | Transaction fees          | Stocks 0.5% | $62 billion    |
|                                    |                            | Bonds 0.15% | $170 billion   |
|                                    |                            | Derivatives 0.05% | $120 billion  |
| Intellectual property protection  | 20% value-added fee        |       | $320 billion    |
| Electromagnetic spectrum          | 20% value-added fee        |       | $84 billion     |
| Total                             |                            |       | $954 billion    |

Source: Author’s creation, using data from Barnes (2014, pp. 143–148)
stock exchanges traded a total of $69 trillion in 2015.\(^1\) If Barnes’ total of
$230 billion from fees on stock and bond trades in the US represented
roughly half of the potential worldwide revenue—say, $500 billion—then
that amount would equate to a weighted average fee of about 0.7 percent,
consistent with the range of the values in Table 13.4. The global volume of
derivative trading on registered exchanges in 2016 totaled more than 25
billion trades.\(^2\) If the global annual revenue from financial infrastructure
fees on derivatives were, say, $300 billion—two-and-a-half times the US
estimate—then the per-trade fee would be about $12.

Provided the fees were small enough, the risk of financial firms relocating
to countries where the fees were not charged would be minimal, because the
cost of relocation would outweigh the cost of the fees. The spread of adoption
of the fees to more and more jurisdictions would set the stage for supra-
national administration. A planetary trust, in conjunction with a supranational
operating partner, such as the International Monetary Fund, could accomplish
this. In the more distant future, a global monetary authority could take on this role, perhaps as a successor to the IMF.

Barnes’ revenue analysis does not include many other kinds of capacity,
such as the internet, publicly owned utility infrastructures, roads, railways,
other transportation assets, or natural capacity. Estimating such revenues,

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**Table 13.4**  Illustrative structure of a progressive financial infrastructure fee levied on trades of different intervals since the previous trade in the same asset by the same owner

| Time interval | Stocks (%) | Bonds (%) | Derivatives (%) |
|---------------|------------|-----------|-----------------|
| ≥ 10 years    | 0          | 0         | 0               |
| 10 years or less | 0.1      | 0.03      | 0               |
| 1 year or less | 0.5       | 0.15      | 0.01            |
| 1 month or less | 1        | 0.5       | 0.05            |
| 1 week or less | 1         | 1         | 0.1             |
| 1 day or less | 1         | 1         | 0.5             |
| 1 hour or less | 1         | 1         | 1               |
| 1 minute or less | 1      | 1         | 5               |

Source: Author’s creation

Note: Fee is expressed as a percentage of the value of the trade

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\(^1\) [http://money.visualcapitalist.com/all-of-the-worlds-stock-exchanges-by-size/](http://money.visualcapitalist.com/all-of-the-worlds-stock-exchanges-by-size/).

\(^2\) Acworth (2017).
he claims, is complex. Yet a brief survey of the volumes of traffic on these infrastructures suggests that small charges levied on their use could yield close to an additional $3 trillion in the US alone, as Table 13.5 shows. The Appendix to this chapter describes how the totals are derived.

| Infrastructure asset               | Fee levied on          | Rate     | Unit     | Revenue ($ bil.) |
|-----------------------------------|------------------------|----------|----------|------------------|
| Water delivery                    | Volume delivered       | $0.01    | Gallon   | 58               |
| Wastewater systems                | Volume processed       | $0.01    | Gallon   | 58               |
| Electric grid                     | kWh delivered          | $0.01    | kWh      | 234              |
| Gas pipelines                     | Cubic feet delivered   | $0.001   | CF       | 227              |
| Telephone lines & cell networks   | Call minutes           | $0.01    | Minute   | 39               |
| Internet (fixed & mobile)         | Data use               | $0.001   | MB       | 2099             |
| Roads                             | Miles traveled         | $0.08    | Mile     | 24               |
| Railways                          | Freight car miles      | $1.00    | Mile     | 36               |
| Waterways and ports               | Tons of cargo          | $10.00   | Short ton| 23               |
| Air traffic control               | Per outbound flight    | $500.00  | Departure| 4                |
| Total                             |                        |          |          | 2805             |

Source: Author’s creation

An advantage of charging a common capacity fee is that it helps to secure the integrity of the underlying asset. The asset becomes something valued because its use carries a cost, even a small one. In turn, the revenue derived from the fee would serve one or more common purposes, whether the support of natural capacity or the establishment of a broad basis of prosperity. People would acquire a vested interest in preserving the integrity of the underlying assets because the fees now provide a vital income stream. It is a form of what one could call common asset security.

Public ownership of these infrastructure assets would not be a prerequisite for the implementation of common capacity fees. It is commonplace for federal or state regulators to impose small fees on customers’ utility bills where private utilities hold a natural monopoly on delivery infrastructures. These fees cover costs of regulation and of state or federal programs in the public interest. Their existence recognizes that the operation of a natural monopoly is both a privilege and a responsibility. Similarly, the revenue from common capacity fees would cover the government’s

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3 Barnes (2014, pp. 147–148).
administrative costs which, given the scale of the potential revenue, would amount to a tiny fraction.

The possibility exists, of course, that businesses might pass on the cost of these fees on to their customers. The selection of fee rates would have to strike a balance between raising revenue and enabling companies to absorb the fees within their overall costs of doing business. If necessary, legislation would require companies to absorb the fees.

**Natural Capacity Fee**

One type of common capacity not listed in Table 13.5 is natural capacity. Mechanisms for collecting fees on artificial common assets are tractable, in the sense that the value of a financial trade, a kilowatt-hour of electricity or a megabyte of data can easily be measured. Natural capacity, however, does not have a single unit of measure. Nonetheless, a natural capacity fee still can be collected, such as from corporate income and from financial trades, the latter mirroring the artificial capacity fee. It would be predicated specifically to improving natural capacity, such as through pollution abatement and ecological restoration. Any funds predicated to improving natural capacity would benefit it so, as long as the fees were small enough to be absorbed into operational costs, they would promote common asset security.

As with artificial capacity fees, a natural capacity fee would be administered by a planetary trust. However, the two flows of revenue would be kept distinct, to maintain predication. The trust could readily be established at the national level by legislation and then, once enough countries had established one, expanded globally.

**Natural Capacity Fees on Corporate Income**

Because larger businesses, on average, should be expected to have greater effects upon natural capacity than smaller ones, a natural capacity fee on corporate income should scale with income. It also could be slightly progressive. The rule of diminishing marginal returns implies that larger businesses will have greater leeway to pay larger fees. Table 13.7 in the Appendix to this chapter illustrates a schedule of fees and potential revenue using data on US businesses. The fees range from 0.5 percent of net income for small businesses up to about 1 percent for large ones. Total revenue, based on 2013 data, would be about $18 billion per year.

**Natural Capacity Fees on Financial Trades**

If natural capacity fees were levied on financial trades, then any given financial trade would be subject to two fees: an artificial capacity fee
predicated to a basic living program and a natural capacity fee predicated to the maintenance and improvement of natural capacity. Although financial trading does not make direct use of natural capacity, the justification for levying such a fee on financial trades is that underlying assets—corporations, whose stock is traded—make use of natural capacity. Within today’s economy, growth in the valuation of financial assets is built upon the exploitation of natural capacity. Charging small fees on financial asset trades would provide a mechanism for a small percentage of that value growth to be returned to nature.

Fees can be designed to deliver a comparable scale of revenue to that obtained from artificial capacity fees, in the low hundreds of billions of dollars a year for the US on present volumes. This is an order of magnitude larger than the potential natural capacity fee revenue from corporations. The total value of stock trades on the New York Stock Exchange and the Nasdaq, which host most of the stock and bond trades in US markets, was about $26 trillion in 2015. For the sake of illustration, suppose that the average fee rate on a stock or bond trade were 0.2 percent of its value. Natural capacity fee revenue from stock and bond trades then would be about $52 billion. On the derivatives side, about eight billion trades took place in US markets in 2016. A per-trade fee of $10, comparable with the above estimate for artificial capacity fees, would yield revenue of about $80 billion, bringing the total to $132 billion.

**Uses of Common Capacity Fees**

What distinguishes a fee from a tax, generally speaking, is that a fee is predicated, whereas a tax is not. Although revenue from all the various fees could in principle be pooled to fund a combination of common benefits, it would be more appropriate to predicate the natural capacity fee to the improvement and maintenance of natural capacity, and the various artificial capacity fees to social prosperity.

**Natural Capacity**

A growing number of studies during the 2010s highlight the benefits of ecological restoration and carbon capture upon natural capacity. For instance, Griscom et al. calculate that reforestation and other forest-related actions “offer over two thirds of cost-effective natural climate mitigation” to

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4 http://money.visualcapitalist.com/all-of-the-worlds-stock-exchanges-by-size.

5 Acworth (2017) reports 8.59 billion for North America, of which the US would be the lion’s share.
meet the goals of the 2015 Paris Climate Agreement, the remaining one-third coming from the protection of carbon-storing peatlands and improved management of soils and grasslands. Many of the measures can be delivered at or below US$10 per tonne of carbon dioxide removed. Other measures between US$10 and US$100 per tonne of CO₂ would be cost-effective by 2030, the authors note. They estimate that as much as 11 trillion tons of CO₂ per year could be mitigated through a variety of bioenergy and carbon-capture methods⁶ which, if implemented at US$10 per tonne, would cost upward of US$110 trillion per year. This amount is more than the total global GDP. Studies of this kind illustrate the scale of what is possible in material terms and the scale of the economic challenge ahead.

Natural capacity fees also could be predicated to subsidies and incentives for material efficiency. While not directly benefiting natural capacity, they indirectly benefit it by reducing the economy’s material intensity upon nature. The funding of subsidies and incentives thus could be taken out of the taxation process and instead be passed directly from the treasury to the government agencies responsible for implementing them. In the US, these include the Environmental Protection Agency and the Department of Energy. Natural capacity fee revenue flowing to these agencies would be used both for in-house programs and for eligible outsourced programs, whether in the form of project funding or as subsidies. In this way, private landowners, for instance, could apply for financial or technical assistance to implement ecological restoration, carbon capture or any other relevant improvement. The tie-in to reductions in property taxes should be evident.

Even though the funds themselves would not pass through the budget process, their disbursement still would have to be subject to legislative oversight, to ensure funds were spent appropriately. This oversight might present an opportunity for citizen participation, which would be a democratic enhancement.

**Basic Living Program: Income, Health and Dependent Care, Education**

If fees on artificial common assets could yield close to $4 trillion per year in the US, then the per-capita value of that revenue would be close to $12,500 per year. Basic income is one of three principal benefits this dividend could fund, the others being health and dependent care and education.

The dividend of $12,500 per person is close to the median US household income of $50,000 to $60,000 during the 2010s, assuming an average household size of four. Yet paying the dividend only in basic income

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⁶Griscom et al. (2017).
might not yield the greatest overall benefit. Households would have to purchase their own health care, dependent care and possibly also education through markets. A simple basic income scheme, by itself, might fail in its intended goal because these services, being fundamental and necessary for widespread prosperity, are relatively price-inelastic. Households with special needs in particular might face costs far exceeding their ability to pay, even with a basic income scheme. The policy also could risk collusion among providers to drive up costs.

A more integrated approach would establish a basic living program, incorporating basic income, free health and dependent care, and free public education. The health and education services would be free, or substantially free, at the point of consumption. Whether the government provided them directly or contracted them is a question for implementation. The difference, however, between the government paying for them on households’ behalf and households paying for them directly is a difference in bargaining power. Service providers would find it much harder to drive prices up against a government, as a single, monolithic customer, than against millions of small customers.

Although the United Nations Universal Declaration of Human Rights includes health care and education as ‘basic human rights’, it does not include a minimum financial income. The present thesis proposes that it should. Moral justifications aside, the reason is because a large economy on a crowded planet can only become materially stable if substantially all members are able to participate in its material efficiency. By subsidizing the basic necessities upon which all households depend—staying healthy, caring for loved ones and educating the family—the purpose of widespread prosperity would be minimally satisfied. Only once these necessities were provided for could households address a prime directive of material discipline. A basic living program also acts as a form of insurance against surprises from nature, until such time as the economy becomes aligned with it. The vulnerability of so many within society during the coronavirus pandemic of 2020 has thrown this advantage into sharp relief.

In such countries as the US, making the change from a system of private health insurance to one of government-subsidized health and dependent care would be substantial yet achievable. In countries with little or no institutional health care, the challenge would be far greater. However, elective redistribution, discussed earlier, could begin to bridge that gap.

7 United Nations (1948) Articles 25 and 26.
The establishment of non-tax funding streams to offer free health and dependent care and education has three other potential benefits. One is a simplification of the tax code in countries operating under a health insurance model, such as the US, where a complex system of tax benefits offsets health and dependent care costs.

Another benefit, broader and less quantifiable but potentially more significant, is that removing the burdens of health and dependent care and education from families frees them not only to engage in a drive for material efficiency but also to innovate and contribute to the economy in other, unforeseen ways. A base level of prosperity, in finance, health and education, should deliver numerous societal benefits, and therefore economic ones, as studies by Wilkinson and Pickett and others have suggested. Crime rates would fall, health care costs borne by providers would fall, educational standards would increase and, with them, economic competitiveness. Individuals who might not have had an opportunity to bring an innovation, a new business or a new service to their community, or to society as a whole, now would have a platform from which to do so. A virtuous cycle would become established, in which prosperity begat prosperity, economy-wide.

If societies that are more equal are indeed more economically competitive, then a third, macroeconomic, benefit should accrue, which is comparative advantage. Early adoption of a basic living program could place a national economy at a short-term comparative advantage over others. This hypothesis that deserves rigorous, quantitative examination.

Chapter 16 will examine the likely budgetary requirements for a basic living program. If common capacity fees by themselves are insufficient to fund those requirements then other mechanisms, such as sovereign money creation, can be employed. Chapter 16 also will examine the potential for natural capacity fees to fund programs benefiting natural capacity.

APPENDIX: POTENTIAL REVENUE FROM COMMON CAPACITY FEES

Potential Revenue from Artificial Capacity Fees

In addition to the sources of revenue from artificial capacity fees proposed by Barnes (2014), this chapter lists a number of others. Table 13.6 provides the revenue estimates, along with data sources and notes on

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8See Chap. 8.
### Table 13.6  Summary of potential revenue from artificial capacity fees on common infrastructure assets

| Infrastructure asset                  | Fee levied on         | Rate   | Unit       | Revenue ($ bil.) | Total US (commercial) | Year | Sources | Notes |
|--------------------------------------|-----------------------|--------|------------|------------------|------------------------|------|---------|-------|
| Water delivery                       | Volume delivered      | $0.01  | Gallon     | 58               | 5.8 x 10^{12}          | 2015 | 1       | 1     |
| Wastewater systems                   | Volume processed      | $0.01  | Gallon     | 58               | 5.8 x 10^{12}          | 2015 | 1       | 2     |
| Electric grid                        | Energy delivered      | $0.01  | kWh        | 234              | 2.3 x 10^{13}          | 2017 | 2       | 3     |
| Natural gas pipelines                | Volume delivered      | $0.001 | Cubic feet | 227              | 2.3 x 10^{14}          | 2017 | 3       | 4     |
| Telephone lines & cell networks      | Call minutes          | $0.01  | Minute     | 39               | 3.9 x 10^{12}          | 2012 | 5       |       |
| Internet (fixed & mobile)            | Data use              | $0.001 | MB         | 2099             | 2.1 x 10^{15}          | 2017 | 4       | 6     |
| Roads                               | Miles traveled        | $0.08  | Mile       | 24               | 3.0 x 10^{11}          | 2015 | 5       | 7,8   |
| Railways                            | Freight car miles     | $1.00  | Mile       | 36               | 3.6 x 10^{10}          | 2014 | 5       | 8,9   |
| Waterways and ports                 | Tons of cargo         | $10.00 | Short ton  | 23               | 2.3 x 10^{9}           | 2014 | 6       | 10    |
| Air traffic control                 | Per outbound flight   | $500.00 | Departure | 4                | 9.0 x 10^{6}           | 2014 | 7       | 11    |
| **Total**                            |                       |        |            | **2805**         |                        |      |         |       |
Table 13.6 (continued)

| Infrastructure asset | Fee levied on | Rate | Unit | Revenue ($ bil.) | Total US (commercial) | Year | Sources | Notes |
|-----------------------|--------------|------|------|------------------|-----------------------|------|---------|-------|

Source: (1) Author’s creation based on USGS: (a) https://waterdata.usgs.gov/nwis; (b) https://water.usgs.gov/watuse/wudo.html; (2) US Energy Information Administration: https://www.eia.gov/electricity/annual/html/epa_02_05.html; (3) US Energy Information Administration: https://www.eia.gov/dnav/ng/ng_cons_sum_decu_nus_a.htm; (4) Cisco Systems (2018), Table 8; (5) US DoT (2017), Table 1–35; (6) US DoT (2017), Table 1–56; (7) US DoT (2017), Table 1–37

Notes: (1) Public, non-residential supply only. Groundwater and surface water withdrawals would be addressed through a material intensity tax. Total public supply in 2015 was 39 billion gallons per day (bg/d; source 1a) of which 23 bg/d was domestic (source 1b), leaving 16 bg/d non-domestic; (2) actual data on wastewater volumes are spotty, so the volume of wastewater processed is assumed to equal the volume delivered; (3) non-residential supply calculated as total delivered energy minus residential delivered energy. Includes commercial, industrial and transportation; (4) non-residential supply calculated as total supply minus residential. Includes commercial, industrial, vehicle fuel and fuel for electric generation; (5) ‘business’ calls means calls made on phones whose accounts are billed to businesses. Data on total call minutes across all platforms are not comprehensive or systematic. A web article on Quora estimates the number of cellular calls in the US each day at around 6 billion (2012). Statista estimates an average cellular call duration of 1.8 minutes in 2012. These data include all sectors (commercial, residential etc.) but they exclude landline and VOIP calls. As such, the estimate in the table might be within the right order of magnitude for total business calls, but it is very uncertain; (6) business fixed internet and mobile traffic calculated by business proportion of total fixed internet and mobile traffic. Managed IP (intranets, VPNs etc.) omitted; (7) total miles in two-axle, six-tire or more trucks, combination trucks and buses. Light-duty, two-axle, four-tire trucks may be a mix of private and commercial. These are omitted; (8) blended rate as weighted average of assumed rates and miles traveled. Assumed rates by vehicle class are: truck, single-unit, two-axle, six-tire or more: $0.05/mile; truck, combination: $0.10/mile; bus: $0.10/mile; (9) class 1 freight, car miles. This is the number of miles traveled by all freight cars, as distinct from all freight trains. Thus, a lumber company, for example, using a freight car to ship a load of lumber would pay $1.00/mile for that shipment; (10) collected at point of loading or unloading; (11) unlike other fees, this one would be charged not to the end-use customer but to the carrier, meaning that it could be passed on to the customer, whether their trip is for business or pleasure. Many trips combine both. It should equate to a few dollars per seat or about $1/100 lb. of cargo: therefore, it might vary according to equipment. About $500 per departure is a rough approximation of an average
assumptions and methods. The fees would be charged to end-use business customers rather than to carriers, with the exception of the air traffic control fee, for reasons explained in the notes.

*Illustrative Schedule of Natural Capacity Fees Using Asset Brackets for US Businesses*

| Asset brackets ($ mil.) | Average net income | Annual natural capacity fee | Percentage of net income | Number of reporting entities | Revenue ($ bil.) |
|-------------------------|--------------------|-----------------------------|--------------------------|------------------------------|-----------------|
| From To                 |                    |                             |                          |                              |                 |
| 0 0                    | $42,297            | $200                        | 0.5%                     | 1,095,574                    | 0.22            |
| 0.001 0.499            | $28,299            | $200                        | 0.7%                     | 3,825,213                    | 0.77            |
| 0.5 0.999              | $70,792            | $400                        | 0.6%                     | 374,436                      | 0.15            |
| 1 4.999                | $142,020           | $1000                       | 0.7%                     | 415,997                      | 0.42            |
| 5 9.999                | $382,176           | $2000                       | 0.5%                     | 70,737                       | 0.14            |
| 10 24.999              | $787,825           | $4000                       | 0.5%                     | 48,639                       | 0.19            |
| 25 49.999              | $1,359,729         | $10,000                     | 0.7%                     | 19,031                       | 0.19            |
| 50 99.999              | $2,073,411         | $20,000                     | 1.0%                     | 11,674                       | 0.23            |
| 100 249.999            | $3,609,822         | $40,000                     | 1.1%                     | 10,344                       | 0.41            |
| 250 499.999            | $7,557,527         | $80,000                     | 1.1%                     | 5580                         | 0.45            |
| 500 2500.00            | $28,496,034        | $300,000                    | 1.1%                     | 7312                         | 2.19            |
| 2500                   | $393,561,849       | $4000,000                   | 1.0%                     | 3266                         | 13.06           |

Total 18.43

Source: Author’s creation, using 2013 data from the US Internal Revenue Service

Notes: Annual natural capacity fees are imposed at between 0.5 percent of average net income for small businesses up to about 1 percent for large ones. Revenue is derived from the fees multiplied by the number of filing entities.
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