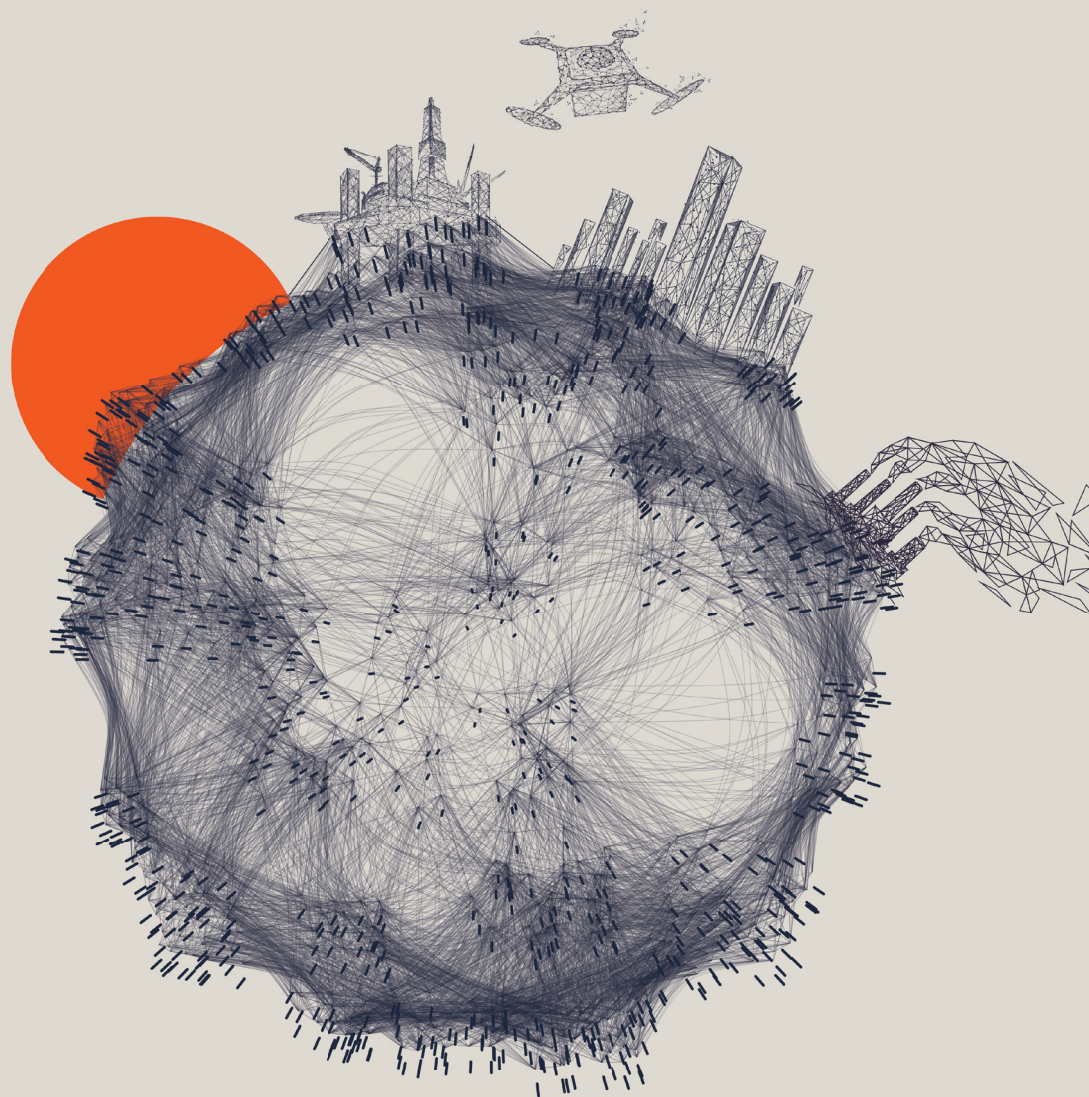


BANKING ON DATA

how the world's tax havens became
the data centres for the digital economy

By Sofia Scasserra and Adriana Foronda



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EXECUTIVE SUMMARY

In this new era of digital capitalism, data is the new raw material fueling the technology industry. This data is becoming increasingly important in terms of value, but above all in strategic terms.

Thus, companies are questioning where to store data in a way that is secure, accessible and inexpensive. This need has resulted in the signing of various Free Trade Agreements with the free flow of data clause, which states that companies can transport data across borders free of restrictions and tariffs. This clause is being signed in a growing number of Agreements between countries, but especially between countries belonging to the list of tax havens.

Not only are large technology companies storing their raw digital materials (data) in these locations, but there is also a growing link between them and global tax evasion. Never before in history have we seen companies with the profit rate of digital corporations, yet they are famous for the meagre tax payments they make annually.

In fact, there is a relationship that is not direct but that has been taking hold between tax havens and storage centres or data centres. We could say that financial power is gradually merging with technological power in the same geographical locations.

There are many reasons why this is happening:

- **Tax havens have banking secrecy laws and make it difficult for governments to access private information.** This responds to the interests of monopolising data by companies so that no one else can develop digital industry tools in the world: to monopolise the raw material in the hands of a few in order to eliminate competition and, above all, States that could potentially use data for better design of public policies, among other uses.
- Tax havens, being centres of wealth and handling of relevant information, **have always been well-connected enclaves with a robust infrastructure.** This is desirable when storing data, since good connectivity networks and physical infrastructure are needed to import and export data quickly and maintain servers internally within the country.
- Energy is the other key issue. Indeed, **the large amount of energy consumed by data centres makes them the target of criticism from governments and civil society.** This is why they are investing heavily in countries that are developing clean energy strategies to benefit their companies. Many tax havens are on this path and it is scandalous that while a country invests in the development of green energy, much of that energy goes to support data centres and not to the productive system or the population.

- **Geographical location and points of exchange** are, finally, the last reason why tax havens are chosen. As digital services advance and greater speed and precision are required for the development of new products, data centres must be housed in strategic geographic locations scattered around the world and with a strong capacity to exchange and distribute information. Tax havens contain both of these characteristics, which makes them attractive when it comes to fixing the physical infrastructure of the digital economy.

For these reasons there is a growing relationship between the two. The same geographic points where economic power is hidden today, is where large technology corporations seem to have chosen to hide information and digital power.

INTRODUCTION

Not so long ago surveillance was just about putting security cameras and a police officer at the front door. Nor was it long ago that 'data' invoked an Excel spreadsheet on a forgotten computer, or that an electronic device was a household appliance we owned once we had purchased it. Not so long ago...

Those concepts have evolved and today these three examples (among many others) could be the subject of long discussions. Digitisation has changed many things, often more than we would like.

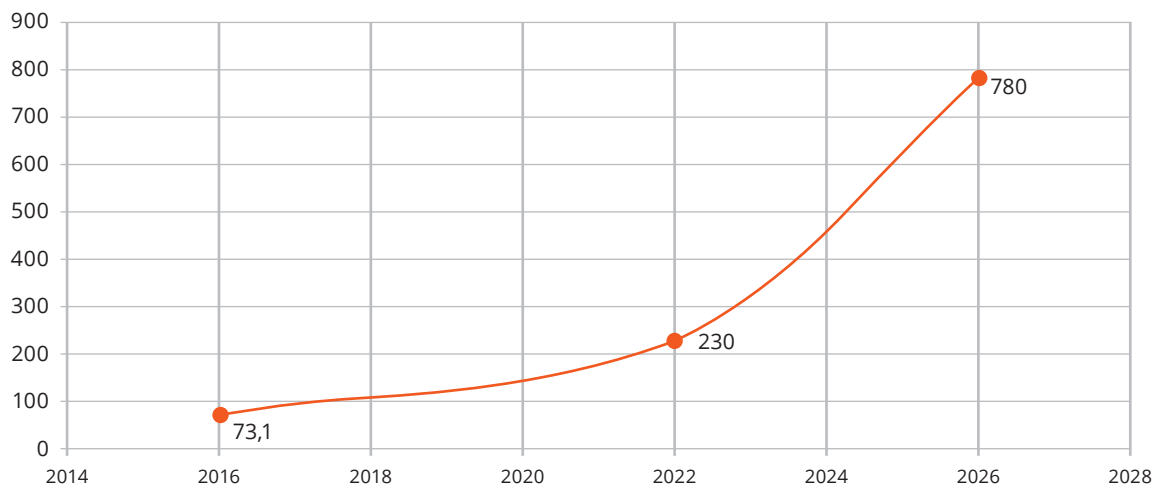
There is now a widespread sense that we no longer own our possessions. There is discussion on the right to use versus the right to own. You buy a product but you increasingly lose sovereignty over it. Is a TV really yours if you have to pay to connect it to the Internet, pay for access to content platforms (for another monthly fee) or a cable service to watch even broadcast channels? The day you stop paying the TV can no longer entertain you. Just like that. The same thing now applies to other appliances and devices. There are already vehicles that, in order to reach their maximum turning radius, require the payment of an annual fee.¹ What will happen when our refrigerator stops working if we do not pay the necessary fee?

We are slowly losing the right to own property and replacing it with the right to use and/or consume it. Hardly anyone buys a new vinyl record or a CD any more – most can use a content platform and as long as you pay the subscription, you can consume as much music as you want.

Good or bad, right or wrong, ethical or not, all this is possible thanks to the data economy, or what many prefer to call 'surveillance capitalism'² or 'platform capitalism',³ among many other terms. The point is that no one can question the value of data in today's world.

Internet traffic and domestic and cross-border data flows have increased even more in the wake of the 2019 pandemic. Global monthly traffic reached 230 Exabytes in 2020,⁴ three times more than in 2016 (73.1 Exabytes per month)⁵ and this figure is expected to triple again by 2026. Bandwidth, which increased by 35% in 2020, is still used unequally, in a global scenario where less than 20% of the population of the least developed countries has personal Internet access.

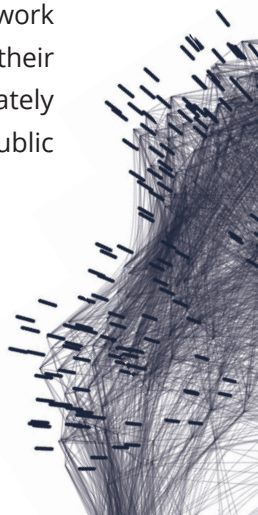
Graph 1. Global monthly traffic (in Exabytes equivalent to 10¹⁸ bytes)



Source: Based on data from UNCTAD, 2021 and CISCO, 2018

The big technology companies have built a real economic empire in which data is the raw material for their production lines. They provide the 'free' use of software through which they extract our data in order to process it and transform it into saleable products. The value-added of the aggregated data they obtain far exceeds the cost of providing the services that encourage users to provide data. Thus, these companies have accumulated capital in an unprecedented way: just five technology companies – Apple, Amazon, Alphabet, Microsoft and Meta – now make up 20% of the total value of the stock market,⁶ a level not seen in a single sector for at least 70 years. These same companies, hiding behind the claim that they are simply platforms, are increasingly investing in the entire global data value chain, including monumental projects for data transmission via submarine cables and satellites,⁷ data centres and investment to find ever better ways to analyse and process raw data. Their competitive advantage is increasingly expansive and they control ever more user data globally.⁸ The data-collection process began in the late 1990s, and has never stopped. Where else have you seen a company not paying for its raw material? It emulates a process of ruthless extractivism rather than a traditional capitalist business.

Be that as it may, this data has become a great source of value and power. Future or predictable information has always had a fundamental value in human history. From the fortune-teller or the priest to whom people turned to for predictions, to the information that gave a market advantage over competitors, having information has always been a source of value and power. But today this has taken on an even more powerful dimension. This information is not only valuable because of what it conveys, but also because it grants market power that makes many companies de facto monopolies. The accumulation of raw material and its ownership, economies of scale, and network effects make it very difficult for competitors to offer similar predictive services, which leads to their failure. Such anti-competitive practices are essentially about accumulating data indiscriminately and storing it where access to it cannot be demanded. Data that should be a non-rivalrous public resource is thus fenced in and becomes a private good.



Data storage has therefore become strategic and is big business. Companies need to find countries that will store data cheaply and securely, and allow private 'ownership'. Just as financial capital can be transferred across borders, which in turn has generated tax havens, so too data is stored in havens where companies can exercise control without state interference.

This study explores how tax havens have now become the preferred destinations for data storage. It is not a direct or causal relationship, as we shall see, but there is a strong tendency to store this strategic raw material in these havens.

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DIGITAL CAPITALISM AND ITS RAW MATERIAL: EXTRACTION, EXTRACTIVISM OR ‘EXTRAHECTION’?

The capitalist structure and the accumulation of value have evolved in recent decades. We hear about the fourth industrial revolution, and robots are shown interacting with humans, as if that were the real paradigm shift. In reality, the emergence and popularisation of computers and mobile phones brought new technological developments in the software industry that permitted the unprecedented accumulation of data: Big Data is here to stay. By Big Data, we are referring to large volumes of data that cannot be handled or processed by the human mind: automated systems are needed.

This is how digital capitalism came into being. An economic system whose industrial function is to standardise and influence our behaviour. This process basically occurs through the extraction of data through the digital applications and platforms that we use every day. Data is extracted and algorithmically processed to obtain patterns and predictions of future behaviour. On the basis of that information, incentives and sanctions are designed that have the ability to modify our behaviour, then to re-extract data from new behaviour, setting off the behavioural industry cycle. This process was first conducted on us as consumers, motivating the consumption of certain products and services, and is well documented in Shoshana Zuboff's book, *Surveillance Capitalism*.⁹ The same behavioural engineering was then performed on citizens, giving rise, for instance, to the Cambridge Analytica scandal, which showed how a company sought to influence elections in countries around the world. In a new phase, this behavioural engineering is practised on workers through platforms and the digitisation and extraction of data, generating incentives to meet the company's demands quickly and efficiently.

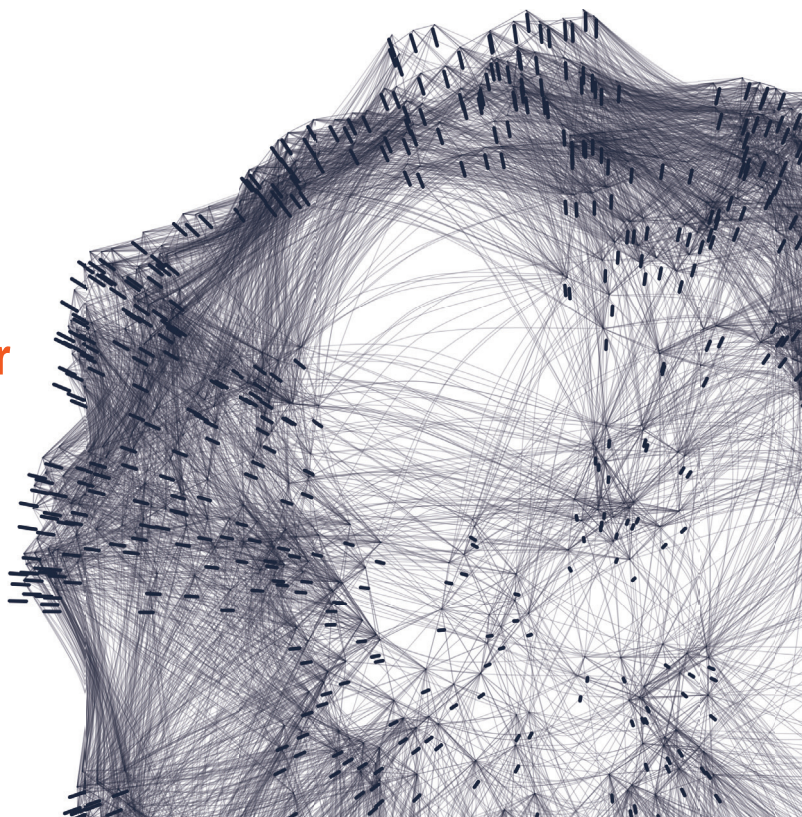
What is monetised here is our behaviour. Data is the raw material and the primary source of this industry. This raw material is found all over the world but is processed only in a few countries and by a handful of companies that control vast amounts of data.

But do companies extract data? We tend now to refer to extractivism rather than extraction, since massive volumes of data are taken indiscriminately, processed little or not at all and exported or taken to be stored in other countries, limiting access and the power of local regulations. These three characteristics, typical of the definition of natural resource extractivism, apply perfectly to data extraction.

But there is one more dimension: Extrahection.¹⁰ This concept means that not only is data extracted, and exported unprocessed, but in some cases the extraction process is undertaken with no respect for human rights and fundamental legislation, such as the right to privacy. The extrahection of natural resources is in violation of fundamental rights and contrary to the interests of local communities and their regulations. Therefore, in many countries around the world, we can go further and refer not only extractivism but also to data extrahection.

The data that is extracted and immediately taken out of national borders and jurisdiction to other areas for subsequent storage and processing. The value of such raw material increases the more access to it is limited. In this new market, the US and China account for half of the world's hyper-scale data centres.¹¹

Data is the raw material and the primary source of this industry. This raw material is found all over the world but is processed only in a few countries and by a handful of companies that control vast amounts of data.



RIVAL GOODS, DATA AND STORAGE

There is a global debate about data as raw material of the digital economy. Is it a public good, as it belongs to the people from which it is harvested? Does it belong to the companies that harvest it? Or, in a third approach, is such data a common good? What is certain is that the data is taken from life itself and from everyday social dynamics. The people from whom the data is extracted are not remunerated in proportion to its value. There are debates on whether this would even be desirable: monetising every aspect of life and conceiving of data production as just another form of labour in a capitalist system seems to be going in the wrong direction.

A fundamental characteristic of data is that it is a non-rivalrous good, which means that using it does not imply that no one else can use it. Just because one company uses data does not mean that another cannot do so, unlike the case with physical goods: if I drink a glass of water no one else can drink it. This gives data a peculiar characteristic that applies to very few goods and services in the economy. Non-rivalry makes it a type of common good, where we can all benefit from its use. In fact, the vast majority of non-rivalrous goods are public services. Such as transport (one person boarding a train does not deprive another person from getting on the same train and following the same route), education and security.

For these reasons, the approaches and debates being raised in various forums are moving in the direction of claiming data for the public good, not so much regarding their ownership, but rather the right to access and use it. In its latest report on the digital economy, UNCTAD calls for a debate on global data governance that allows communities and states to access data for the design of public policies and for the benefit of the communities that have provided it, without undermining the profits of technology companies and their ability to design artificial intelligence (AI) based on the raw data.

The companies argue that this would be detrimental to business. Allowing access to data would mean that more companies and firms could use it to compete and generate alternative tools, limiting the market power of the current data behemoths. In other words, it would break their monopoly and favour competition and diversity – and technology companies depend on maintaining their monopoly, which is the basis of their business model.

Almost all technology platform companies have adopted a business model that makes an initial loss, sustained by venture capital. In other words, they get investors who bet on their strategy. They then build up an aggressive business that includes monopolistic practices until they succeed in stabilising the market and generating profits.¹² A case in point is Amazon, both because of its magnitude and for having been one of the first. The company was created in 1994, and achieved a positive balance sheet only at the end of 2003.¹³ A SOMO report¹⁴ shows how corporations known as 'big tech' or large platforms have two elements in common: the first is their largely uncontrolled corporate power, and the second is their highly financialised nature. Despite any differences in the initial models and financing structure, they all fail to make any dividend payments in the early years, having heavily leveraged companies. Indeed, the difference between these payments is striking: between 2000 and 2019, Microsoft and Apple paid out a total of about \$759 bn to their shareholders (\$235 bn in dividends and \$524 bn in share buybacks). During the same period, Amazon, Facebook and Alphabet paid no dividends, and Alibaba and Tencent jointly paid out \$5 bn. 'This suggests that once companies have gotten past the difficult scaling period and gained a dominant position, they can start to reward their shareholders. That said, whether they actually do so could also depend on the intentions of institutional investors and other shareholders.'¹⁵

During this period, the strategy of cornering the market to create a monopoly is based on four pillars:

1. Huge and indiscriminate data extractivism to obtain information, improve processes, and sell predictive products so that peripheral companies use them to improve their sales.
2. The improvement of algorithms and automated processes to make the results increasingly accurate.
3. A strong investment in designing their marketing strategy. Platform companies are able to position themselves as leaders thanks to their alliances, promotions, and reaching new customers.
4. Buying out smaller competing companies or dumping them in order to eliminate them completely.

In this sense, monopoly and market domination is what gives them value and allows them to become the giants they are.

For this reason, they are reluctant to share the data they store and have begun a strong offshoring strategy, together with supranational agreements that allow them to offshore the storage of such data to regions where it is harder to require them to allow access to it.

This strategy is similar to what has been done with knowledge: **knowledge is a non-rivalrous good that many can use; intellectual property rules protect knowledge in order to turn it into a rival good and generate monopolies that monopolise this knowledge in favour of companies and to the detriment of citizens. The same is now happening with data.**

THE OFFSHORING STRATEGY

Examining the terms and conditions of the platform companies reveals that most of them set out specific clauses regarding the use and handling of data. As an example, Amazon's terms and conditions variously state that it reserves the right to store data from its various services in locations other than the customer's.¹⁶

These contracts are designed to guarantee that the company is allowed to store and manage the data according to its interests. Although large companies make it clear that they comply with the data-protection laws of major countries or economic blocs (in particular the European Union, EU), this is not always the case. In poorer countries the terms and conditions may be in conflict with national laws and therefore be null and void. Nevertheless, the companies oblige the user to consent in order to use the platform.

Not satisfied with this, platform companies also allocate resources through their parent companies to lobby in order to shape national laws to their own benefit. In many countries, parliaments consult companies when drawing up legislation that restricts their ability to operate in the market.¹⁷

In reality, national governments have done and can do a lot to limit what companies do with user and employee data. In some countries and regions there are personal data-protection laws that have been very effective in controlling the processing of personal data.

There are also regulations that restrict what companies can do in relation to storing data. This is fundamental not only because by taking data to other areas, sovereignty over it is lost, but also because for many countries it is difficult to develop an ecosystem that allows regional storage, something that will be key with the arrival of 5G networks. Indeed, with the advent of the new telecommunications networks, new services based on lower data latency are expected. What does this mean? They require a swift response. For example, a self-driving vehicle requires considerable information to be processed and returned instantaneously so that the vehicle can make decisions on how to operate. If the storage location is remote, this latency increases, making the vehicle more dangerous or even inoperable in the country. This is also why, in the future and in order not to widen the inequality gap, it will be necessary to build data-storage ecosystems around the world.

The purpose of this clause is clear: to free the flow of data and data storage across borders.



Given the existing national or regional regulatory capacity, and in order to limit it, neoliberal members of the World Trade Organization (WTO) have for years been negotiating a digital economy agreement known as the Joint Statement Initiative on e-Commerce (JSI).¹⁸ This agreement has, among many other very problematic clauses, one that is fundamental to cement the offshoring strategy. This is popularly known as Free Flow of Data, reflected in section B.2 of the Agreement¹⁹:

No [Party/Member] shall [prohibit or restrict/prevent] the cross-border transfer of information, including personal information, by electronic means, [if/where] this activity is for the conduct of the business of a covered person.]

Each [Party/Member] shall allow the cross-border transfer of information by electronic means when this activity is for the conduct of the business activity of a covered person.]

The [Parties/Members] are committed to ensuring cross-border data flows to facilitate trade in the digital economy. To that end, cross-border data flows shall not be restricted by:

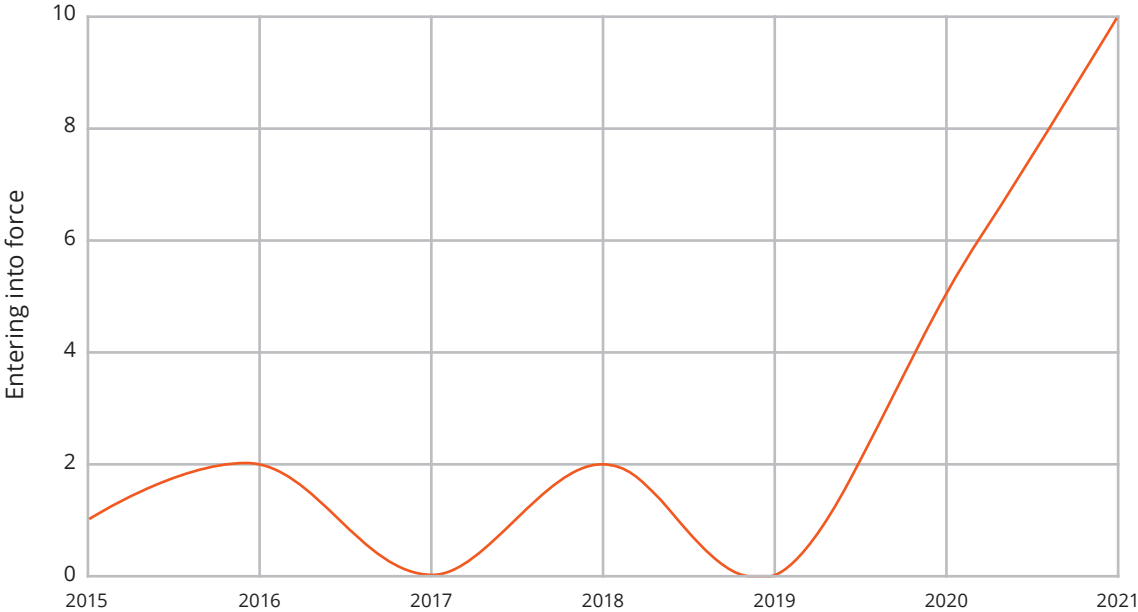
- (a) requiring the use of computing facilities or network elements in the [Party's/Member's] territory for processing, including by imposing the use of computing facilities or network elements that are certified or approved in the territory of the Party;
- (b) requiring the localisation of data in the [Party's/Member's] territory for storage or processing;
- (c) (c)prohibiting storage or processing in the territory of other [Parties/Members];
- (d) making the cross-border transfer of data contingent upon use of computing facilities or network elements in the [Party's/Member's] territory or upon localisation requirements in the [Party's/Member's] territory.]

The purpose of this clause is clear: to free the flow of data and data storage across borders. Technology companies know that no matter how much they protect themselves in their terms and conditions they force the user to sign, governments have the power to design laws in conflict with those terms and conditions, and therefore limit their business strategy. There is therefore an attempt to use a binding document such as the Trade Agreements in the WTO to set an international rule to limit such regulation.

Given that the JSI has already been negotiating for five years and is not expected to be concluded soon, this type of clause started to be approved in less bureaucratic instances such as the Free Trade Agreements, in which it is faster to approve such clauses in regional or bilateral negotiations.

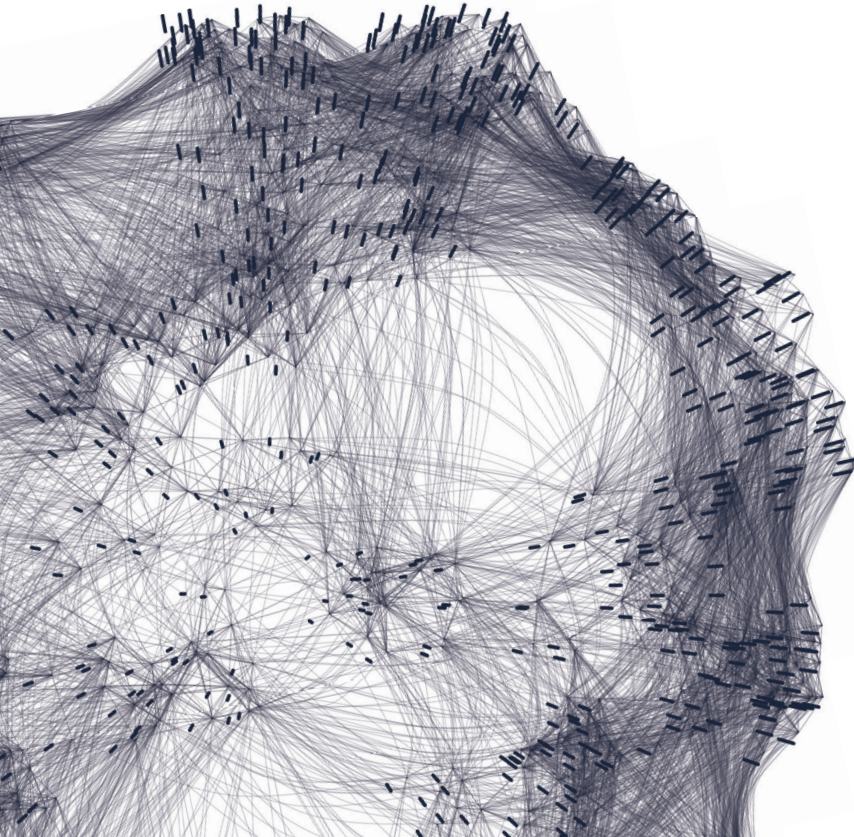
Many agreements containing this or similar clauses are currently under negotiation, but according to the WTO database, approximately 20 such agreements have already been approved and entered into force and are fully operational.

Graph 2: Number of Free Trade Agreements with the Free Flow of Data clause entering into force per year



Graph 2 shows how this clause is gaining ground in negotiations, and included in a rising number of agreements.

Of the 20 Agreements that have entered into force, 18 had some of the world’s 15 most important tax havens²⁰ as signatories.



Of the 20 Agreements that have entered into force, 18 had some of the world’s 15 most important tax havens as signatories.

A BIT OF HISTORY: WHAT ARE TAX HAVENS AND WHAT BENEFITS DO THEY OFFER?

In his book *Treasure Islands*, Nicholas Shaxson²¹ underlines that in order to understand the economic history of the modern world, it is important to understand what tax havens are and how they work, since they are at the heart of the global economy and one of the most important instruments to continue reproducing social inequalities.

Tax havens are territories or states with a favourable tax regime especially for non-resident citizens and companies, usually in the form of total exemption or reduced tax. Companies and private investors use these tax havens to avoid paying taxes in a jurisdiction imposing a higher level of taxation.²²

The creation of tax havens can often be confused with some governments' strategies to attract more inward investment by offering low corporate tax rates. What characterises a tax haven is mainly little or no taxation, **the lack of effective exchange of information**, the lack of transparency in the legislative, legal or administrative provisions, and the non-existence of economic activity of natural or legal persons domiciled in its territory.²³

A tax haven allows corporations to generate high profits through tax policies for non-residents, with stable political, monetary, and economic regimes and favourable conditions such as good transport and communication systems, and legal provision to preserve banking, financial and commercial secrecy. *Tax havens protect the confidentiality of operations carried out in their territory. The legislation in force in that country guarantees banking and financial business banking secrecy.* In many cases, the regulations on associations and corporations offer freedom and flexibility in a territory where the company is not obliged to carry out any commercial activity, creating letterbox or shell companies.

For the countries offering tax havens, these Offshore Financial Centres reduce tax revenues and social benefits, encourage speculation and financial instability, threaten the autonomy of democratic governments, facilitate money laundering and, as Shaxson²⁴ points out, tend to maintain or generate poverty.

According to the Tax Justice Network (TJN), an annual \$427 bn in tax revenue is lost in tax havens.²⁵ In addition, between \$21 tn and \$432 tn in financial assets are deposited in tax havens. In its 2021 annual report,²⁶ TJN shows that global revenue losses for that year were \$483 bn worldwide, of which about \$312 bn every year in direct tax revenue is due to cross-border corporate tax abuse. In addition, transnational corporations (TNCs) are transferring profits worth \$1.19 tn to tax havens each year, which deprives 'governments of tax revenues, increases inequalities between and within countries, and undermines the smaller, domestic firms that generate most employment'.²⁷

Lists of tax havens

With the first report published by the Organisation for Economic Co-operation and Development (OECD) in 1998, tax havens began to be made visible in order to intensify efforts to combat tax evasion. In 2000, the OECD presented the first formal list of 35 tax havens,²⁸ with no OECD or EU member country appearing on the list. This has inspired other organisations and academics to present other lists.^{29,30} For example, James R. Hines Jr. published a list³¹ of 52 tax havens which, unlike previous lists, were quantitatively scaled by analysing business investment flows estimating the world's ten largest tax havens³² of which only two, Jersey and the British Virgin Islands, were on the 2000 OECD list. In 2018, Gabriel Zucman published a similar list in which he ranks Ireland as the largest global haven³³ and shows that US corporations account for nearly half of all profits shifted.

In an index of corporate tax havens, TJN regularly publishes the list of countries that help companies pay less corporate income tax.³⁴ Based on an assessment of countries' tax and financial systems, TJN published in March 2021 a list of 70 tax havens, topped by the British Virgin Islands, Cayman Islands, Bermuda, Netherlands, Switzerland, Luxembourg, Hong Kong, Jersey, Singapore and United Arab Emirates (UAE).

In addition, bank secrecy is an essential element in a tax haven that protects both the identity of the account holder, and also safeguards the origin and amount of an offshore company's asset holdings.³⁵ TJN presents a regular Financial Secrecy Index,³⁶ which ranks jurisdictions that are most conducive to companies and individuals hiding their finances from the rule of law by facilitating tax abuse. The index identifies the biggest contributors to financial secrecy and ranks the US, Switzerland, Singapore, Hong Kong and Luxembourg among the countries with the most harmful jurisdictions in terms of opacity and financial secrecy.

Along with various other efforts, the OECD has been developing processes to reduce tax-base erosion and profit shifting caused by the existence of loopholes or undesirable mechanisms. Since 2008, in the wake of the Global Financial Crisis, the US and EU have demanded information from other countries on their companies opening bank accounts in possible tax havens.

Data leaks

But it is only since the recent data leaks reported by journalists that tax havens have aroused public unease and forced many countries to seek to stamp out tax evasion.³⁷ Among them, the Panama Papers (2015), one of the largest information leaks to date, with 1.5 million files including emails, documents and bank statements, revealed how 214,000 companies owned by corporations, politicians, athletes and artists have for years to evaded taxes through the link with the Panamanian law firm Mossack Fonseca.³⁸ This tax evasion leads to the existence of funds that must necessarily be laundered to be legally used again. One of the hundreds of cases revealed by the Panama Papers in 2016 was that of the Prime Minister of Iceland, Sigmundur Gunnlaugsson, who resigned on being found to be involved with the offshore company Wintris. This company had awarded itself €3.5 million in bonds from Iceland's three largest banks, which made it possible to bring that money back into the country.³⁹

In Latin America, many political leaders were involved as a result of the leak of data on tax havens. For example, the investigation of former Argentinian President Mauricio Macri and his brothers Mariano and Gianfranco regarding alleged tax evasion is still ongoing. The Panama Papers leak in 2017 suggested that the Macri brothers failed to declare \$4 mn held in a Swiss account in the name of BF Corporation S.A.,⁴⁰ a company registered in Panama since 2009. Later, due to the leak in 2021 of the Pandora Papers, Mariano Macri⁴¹ was again implicated as one of the 2,251 Argentinians owning offshore structures.⁴²

Likewise, in 2017 'the Paradise Papers', carried out by the International Consortium of Investigative Journalism, analysed 13.4 million documents linking companies and individuals with tax havens through the law firm Appleby. The list included former German Chancellor Gerhard Schröder,⁴³ companies such as McDonalds, Apple, Uber and Siemens. The investigation showed that the Netherlands, Ireland and Bermuda account for 35% of the profits declared by US companies abroad.⁴⁴ It also brought to light the tax-avoidance strategies of companies such as Nike, which, through its subsidiary in Bermuda that had the assignment of intellectual property, was able to get other Nike subsidiaries to make internal payments for the use of its registered models, accumulating profits of over €11 bn.⁴⁵

Intellectual Property, Patent Boxes and Tax Havens

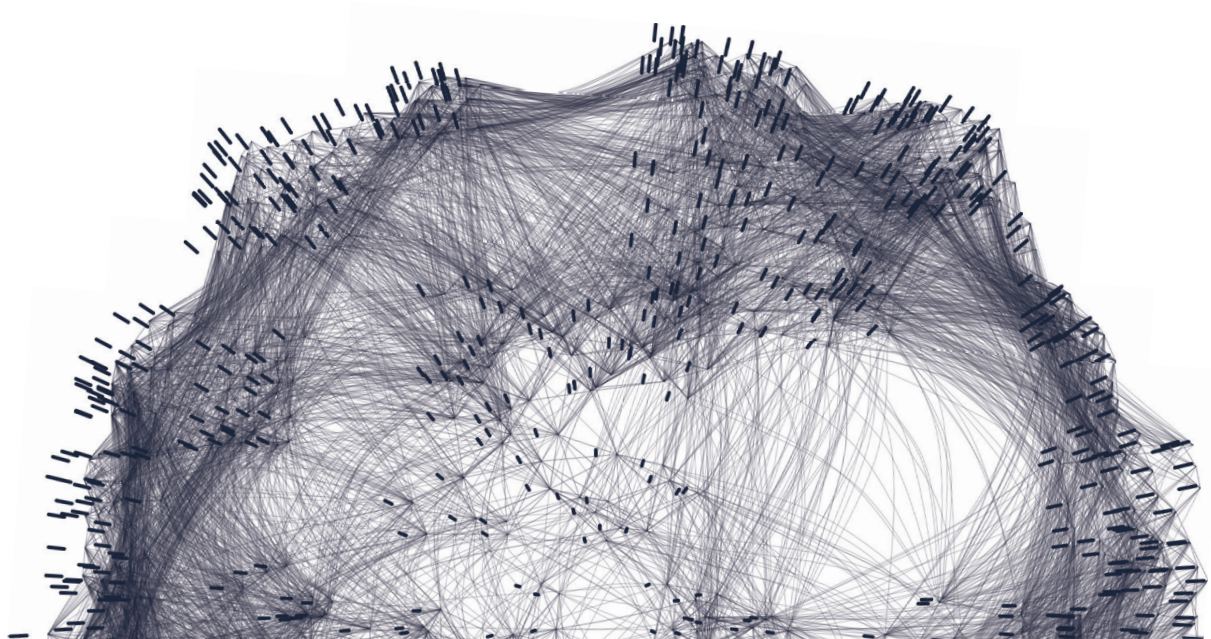
Intellectual property (IP) assets, which include patents, trademarks, copyrights (in particular for software), and trade secrets, are subject to taxation in most countries. They represent an increasing part of companies' assets. For this reason, many TNCs avoid paying taxes by 'offshoring' the legal ownership of their company's intellectual property to low-tax jurisdictions, in some cases through Patent Boxes, which are legal devices that many countries use as tax incentives, including tax havens.

Through the development of IP ownership structures, TNCs assign an artificially low price to a piece of intellectual property that is then transferred to a subsidiary company located in a country with an IP box regime, often tax havens offering lower tax rates on income derived from intellectual property.⁴⁶

Many countries have incorporated tax legislation that grants preferential tax treatment to income derived from patents, which has significant effects on the location of intellectual property, again highlighting the role of tax havens.⁴⁷ A number of countries offer attractive corporate tax rates, for example, 0% in Malta and 2.5% in Cyprus and Liechtenstein, Luxembourg offers a rate of 5.6% and the Netherlands offers 5% for self-developed patents⁴⁸ through Patent Boxes, called Innovatieboxes. This is a big difference compared to other countries like Sweden, where the tax rate is 20.6%⁴⁹, 22% in Norway⁵⁰, or 15% in Brazil⁵¹, to name a few.

It is clear is that, regardless of where or when the value is created, developed and managed in a platform or service, this does not happen in a tax haven where there is only a shell company. One case is that of Google, which, although it operates in countries with tax rates averaging 20%, manages to maintain a tax rate of 2.4% through a model called 'double Irish scheme'⁵² related to the management of its intellectual property.

...bank secrecy is an essential element in a tax haven that protects both the identity of the account holder, and also safeguards the origin and amount of an offshore company's asset holdings.



TAX HAVENS IN THE TECHNOLOGICAL ERA AND TECHNOLOGY CORPORATIONS IN TAX HAVENS

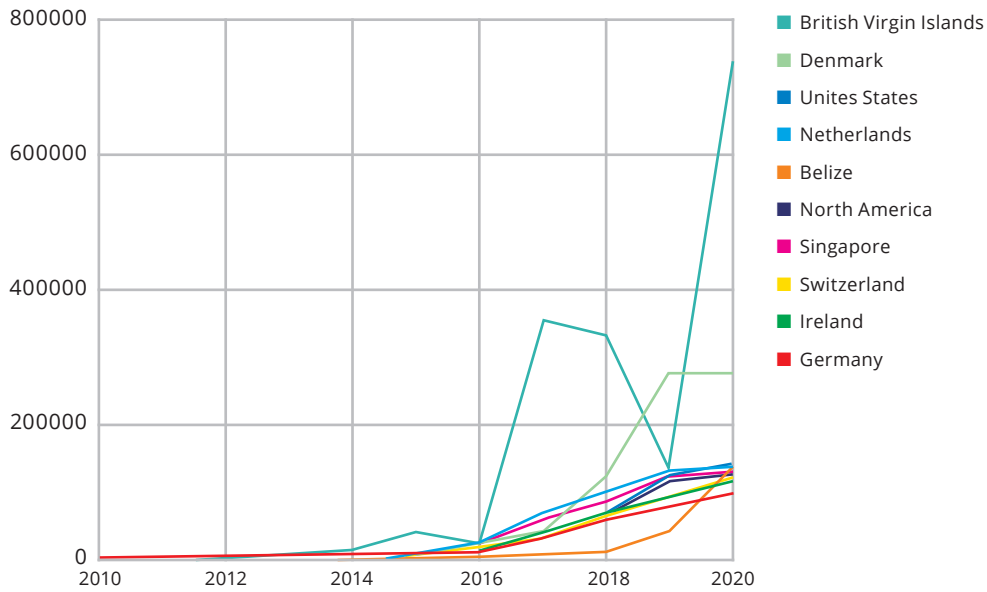
Tax havens have also been adapting to the needs of the digital age. Some facts that were previously unimportant are now essential to provide a useful infrastructure for profit shifting and tax evasion. These include Internet access, network stability, and latency.

Table 1. Countries with the fastest connectivity⁵³

Rank	Country	Average download speed (Mbps)
1	Jersey	274.27
2	Liechtenstein	211.26
3	Iceland	191.83
4	Andorra	164.66
5	Gibraltar	151.34
6	Monaco	144.29
7	Macau	128.56
8	Luxembourg	107.94
9	Netherlands	107.3
10	Hungary	104.07

The World Bank conducted a survey on the countries that most use technology to encrypt information to secure Internet transactions and it is no coincidence that six of the top 10 countries worldwide with certifications of secure Internet services (by 1 million people), are or have been considered to be, tax havens. These include the British Virgin Islands, the Netherlands, Belize, Singapore, Switzerland and Ireland.

Graph 3. Secure Internet Service (TLS/SSL Certifications Obtained by hosts in a given country by 1 million people)



Source: Based on World Bank (2022)⁵⁴

Likewise, it seems to be no coincidence that the countries considered as tax havens have the best connectivity indexes. For example, according to data from the International Telecommunications Union (ITU), which centralises dozens of telecommunications indicators worldwide, and given the TJN list of countries with the highest Financial Secrecy Indexes, in 2019, 92.84% of citizens in tax havens had domestic broadband access, compared to the global average for that year of 79.94%.

It is also evident that for decades there has been a close relationship between technology corporations and low-tax jurisdictions.⁵⁵ These corporations have created a complex network of interrelated entities to facilitate international sales and reduce their taxes globally.

In 2021, The Left party in the European Parliament published a report showing how Amazon evaded taxes, principally by using the tax haven based in Luxembourg in order to take advantage of the benefits that the international system offered.⁵⁶ Moreover, it also used it as a storage point for information. According to 'Amazon Atlas',⁵⁷ published by Wikileaks in 2018 based on information from 2015, Amazon operates in 38 facilities in northern Virginia, eight each in San Francisco and Seattle and seven in Oregon. In Europe, it has seven data centres in Ireland, four in Germany and three in Luxembourg. In the Asia-Pacific region, it has 12 data centres in Japan, nine in China, six in Singapore and eight in Australia. It also has six centres in Brazil. In the case of Google, in Europe the company stores data mainly in the Netherlands, Belgium and Ireland.⁵⁸

Another example is Microsoft, which in 2020 generated profits of \$315 bn in Ireland but paid no corporation tax, arguing that it is domiciled for tax purposes in Bermuda.⁵⁹

Technology upgrades in terms of connectivity and secure networks in tax havens are necessary in order to be able to provide the information companies need to safeguard. The investment in infrastructure clearly responds to a need that, since it is constantly used by the same technology companies that dominate the information market.

WHAT THINGS ARE RELEVANT WHEN CHOOSING WHERE TO STORE DATA?

For some years (if not decades) it has become vital for corporations to store their data. The decision is strategic and made on the basis of criteria corresponding to the company's needs and resources, such as

- To store in the cloud or on a local server
- To outsource to a company or to have its own servers
- To store in in the home country or in another country
- The degree of security, access and encryption.

For years, many companies have opted to pay to offshore their information. The first question is why a company would want to use offshore service to store its data and where to do so. The answer is complex and has multiple dimensions. There is no single criterion that determines how a company to decides where and how to store data, but it is possible to discern the criteria and trends that shape the decision-making process. For this it is essential to understand what data centres are and the various criteria for offshoring a company's data.

Data centres

Data centres are facilities that enable the continuous operation of technological services. They are computer systems composed of networks, hundreds of computers, an uninterruptible power supply, and ventilation and cooling systems so the servers do not overheat.⁶⁰

The content of the stored data is diverse. According to CISCO,⁶¹ by 2018, 22% of the information stored in data centres is consumer-focused, mostly in video content and data on social networks; and 78% is business data mainly related to databases for analysis, enterprise resource planning (ERP) systems and other business applications.

Regarding the traffic in data centres, 74% is internal, 12% is between data centres and only 14% is between a data centre and the user.⁶²

Data privacy

One of the main reasons why companies decide on the physical destination of their data is closely related to tax havens. Indeed, a country's political and legislative environment is one of the major considerations. Political stability, independence, secure legal frameworks for corporations and stability in terms of policy changes, as well as a country's international relations, will allow for greater security of the company's financial and personal data.

The jurisdiction where the information is stored is critical. If data is stored in a country that does not have strict privacy laws, it will be easier for its government to access it. The fact that a country can ensure the security of a company's data, even over and above its own domestic legislation, and guarantee that only the company can decrypt its data, is a value that not all countries can grant. Add to this the fact that this information may compromise a company that engages in some kind of tax evasion, this is not information that they want to be accessible to other governments or to be subject to blackmail and digital scams.

For this reason, several companies offer to host data in places considered tax havens. For example, in the case of Switzerland, some companies working in the data-hosting service show it to be a neutral country, with a secure legal framework, a high level of infrastructure, geographically attractive because lies at the centre of Europe (which represents a low latency), with low environmental risks and low levels of tax liability. Hosting data in Switzerland implies having a high level of data protection in a country with political stability – at least, that is the service offered by several companies to host other companies' data.⁶³ Companies offer a similar hosting service in countries such as Ireland and the Netherlands in Europe, Singapore in Asia Pacific and Panama or Bermuda⁶⁴ in the Americas.

Regarding storage, governments' main concern is that their citizens' data is not stored in countries that have poor security standards and/or do not have laws that respect personal privacy. For this reason, Chapter V⁶⁵ of the European General Data Protection Regulation (GDPR) establishes that European citizens' data stored in other countries must comply with the security and privacy standards of European law, regardless of their location. When the GDPR came into force, controversies arose with Facebook, which stated that it had no control or knowledge of the whereabouts of European citizens' data.⁶⁶ The law served to check the company and other social networks as they did not comply with the regulation and had no idea how to implement it.⁶⁷

In reality, companies, especially large corporations, have no problem in complying with such standards and protecting the privacy of their customers and consumers. At the same time, an increasing number of companies are storing information within the jurisdiction to which they provide services in order to provide confidence. This has been the case with TikTok in Texas,⁶⁸ for example. In fact, **most companies seek to store the data they hold in jurisdictions with strong data-protection laws so that governments cannot access the stored information.**

Indeed, it is not *privacy* that is a problem for companies, most of which are willing to comply with such standards, but *rivalry*, which is a fundamental characteristic of data. The fact that the information is accessible would expose the monopoly on information management as a source of market power. For this reason, they are not fleeing from security and privacy regulations, but from governments capable of legislating to gain access to such information. Data-protection laws also protect corporations. And that is the goal.

Tax havens provide several benefits to this industry. Secrecy in the handling of information, which is fundamental to make data a rivalrous and scarce good; tax exemptions on energy consumption; and corporate-friendly governments that make it easier for corporations to lobby in order to prevent other governments from interfering in the management of information.⁶⁹

For this reason, and in order to expose the existing relationship, TJN's⁷⁰ bank secrecy index was taken as a proxy of the relationship between governments and non-intrusiveness in stored information and the number of data centres available for storage in each country provided by Cloudsense,⁷¹ and a correlation was run. It found almost a 70% relationship between the two. In other words, secrecy explains the installation of data centres by 70% and vice versa.⁷²

The infrastructure of connectivity networks

Another fundamental issue that corporations consider when deciding the destination of their data is the Internet infrastructure: network stability, good Internet connections, cheap electricity, low environmental risks and low connection latency, among other components.

Obviously, good connectivity is essential in order to achieve data storage and processing.

The decision is based on these criteria, among others, depending on the company's business model. Physical proximity of data used to be important when telecommunication networks were not fast and the Internet was rapidly expanding. Then this changed and although relative proximity is sought it is no longer so relevant, but will be critical when 5G networks become fully operational. Indeed, in order to have services that require minimum latency, such as self-driving vehicles or remote surgery, the proximity of data storage and processing could mean the difference between life and death for consumers and users. Today, lower latency is important for future investment and for more efficient transfer of large amounts of data.

Energy conditions and environmental standards

Data centres depend on some environmental standards and conditions to create ideal conditions for their operation. For example, heat and humidity would jeopardise the continuous operation of servers, which also require constant access to power and water. This has had major consequences in some countries such as Singapore and Ireland, where data centres consume an increasing volume of the power, endangering domestic energy supply. Singapore, a key country for technological development in Asia Pacific, imposed a moratorium from 2019 that suspends the installation of new data centres due to the strain they put on the electricity grid (7% of total consumption in 2020) and the increase in carbon emissions.⁷³ To date several projects in Singapore are seeking to incorporate renewable energy sources and make better use of resources in the maintenance of data centres, in the hope that the moratorium will soon be lifted.

Maintaining these data centres depends on energy to keep them running and water to cool them. Like the cooling systems in large office buildings, water often evaporates in the cooling towers, leaving salty wastewater, known as blowdown, that must then be treated by local utilities.⁷⁴

Needs are increasing as climate change exacerbates drought. Indeed, approximately 20% of US data centres rely on drought-affected watersheds, a reliance that poses a risk to the digital business.



Data centres in Ireland, a problem for the environment and power supply

Since the 1970s,⁷⁵ the Irish government has developed a TNC-friendly policy by offering attractive tax rates. In addition, other factors such as language, and lower manufacturing and labour costs, have made Ireland the technology development capital of Europe. Currently, close to 1,000 TNCs in this sector have established their EU hub in the country,⁷⁶ including Microsoft, Facebook, and Alphabet.

Ireland, especially the capital, Dublin, is part of the European network of key data centre markets along with Frankfurt, London, Amsterdam and Paris. These facilities include hundreds of servers, computers and networks with ventilation and cooling systems to ensure their continuous operation, and require uninterrupted power and water supply. This has become a problem in Ireland, where data centres use 14% of the country's electricity⁷⁷ purchased through the national grid where more than half of the electricity supply comes from natural gas.⁷⁸

This is not only a problem for the environment, but also for domestic supply. Currently data centres consume 3% more electricity than the country's rural areas.⁷⁹

Based on the data centres already installed in Ireland, the Irish energy company Eirgrid estimates that the country's electricity consumption will rise by 28% by 2030. However, if the 30 proposed projects for the construction of new data centres are approved, this figure could reach 70% of the grid capacity by 2030.⁸⁰

There is an initiative to impose a moratorium to stop the approval of new data centres in the country. This was initially rejected, arguing that each case will be evaluated, including the possibility for companies to create their own power⁸¹ as necessary, such as a threat of blackouts due to the strain that data centres place on the power supply.⁸² but all is not lost, and in August 2022 Amazon and Microsoft had to suspend the installation of new data centres in the country because of the application of the moratorium in view of the energy shortage.⁸³

To date, technology corporations are increasingly involved in the production of more renewable energy sources in Ireland, especially in Dublin. However, until a renewable energy supply capable of meeting current and future electricity demand is developed, Irish data centres will require fossil fuel energy sources to operate.

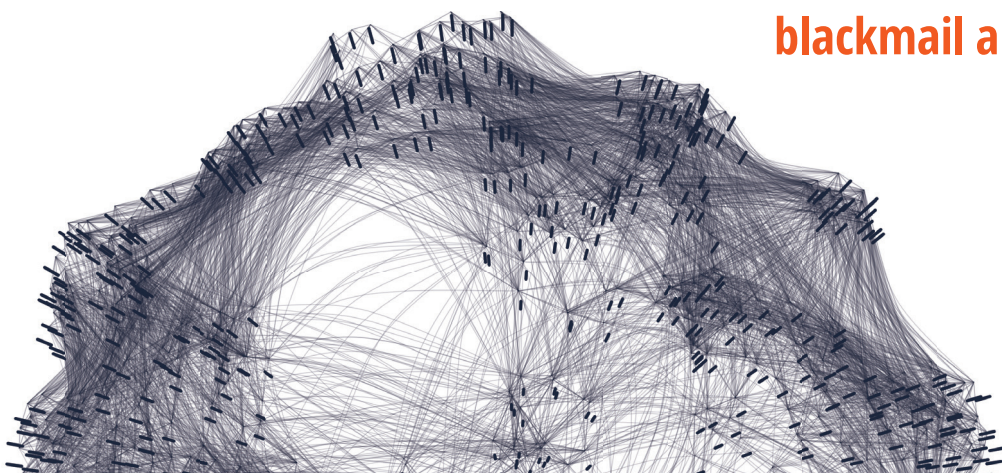
Geographic location and exchange points

Last but not least, the infrastructure of the exchange points is vital when deciding where to locate the large data centres. Geographical proximity is essential for faster networks, lower latency and greater accuracy. This has been of paramount importance in the past and will become particularly important once 5G networks and technologies such as self-driving vehicles become widespread.

An additional consideration is exchange points. An Internet Exchange Point (IXP) is a physical infrastructure through which Internet service providers exchange traffic between their networks. This reduces the portion of traffic that has to be delivered to each provider, which reduces the average cost per bit of delivering the service. In addition, increasing the number of routes 'learned' through the neutral point improves routing efficiency and fault tolerance. Networks interconnecting through these points achieve higher speed, lower costs and can carry more information traffic.

Understanding the operation, uses, advantages and development of the exchange points allows companies to choose a better location for the databases.

...this information may compromise a company that engages in some kind of tax evasion, this is not information that they want to be accessible to other governments or to be subject to blackmail and digital scams.





The case of Amsterdam

Although the Netherlands is a small country, it has been considered a tax haven for several years, ranked as the World's Largest Investor by SOMO, Centre for Research on Multinational Corporations, with outward investments that exceed those France, Germany and the UK combined.⁸⁴ In 2015, 80% of these direct investments were channelled through mailbox companies, so many of them are not Dutch companies, but foreign corporations and investors using these mailbox companies as a tax haven or tax conduit. It is estimated that in 2020 there were around 14,000 shell companies in the country with assets in their accounts greater than €4 tn, amounting to lost tax revenue to other countries of €22 bn a year.⁸⁵

The Netherlands, with a tax policy enabling Dutch companies easily to expand their business abroad, has long been attractive to foreign companies through these mailbox companies. It is also very attractive for investments by technology companies and the creation of infrastructure such as data centres.

The Netherlands has a total of 378,000 m² of land for data centres, of which 74% are in the Amsterdam metropolitan area.⁸⁶ The main reason why data warehousing has become a big business for the city is because it was one of the first exchange points in Europe, with the capacity to distribute information to the whole region quickly and at low cost. Currently, the European countries with the most exchange points are Germany, France, the UK, Poland, Italy, Switzerland and the Netherlands, among others to a lesser extent.

The Amsterdam exchange point transferred a total amount of data per month (average incoming and outgoing) of 75,940 TB in November 2008. Today it transfers 3.38 TB per second. These traffic speeds make the Amsterdam Internet Exchange the second largest in the world. Measured by the number of connected members and Internet traffic, it ranks third after the German Commercial Internet Point.⁸⁷

The large amount of energy consumed by the storage industry has made companies concerned about using green energy to avoid ethical-ecological challenges: today 86% of the data centres in the Netherlands are supported by renewable energy, which generates a trade-off between electricity for household and industrial consumption and the energy consumed by these data centres. In the Netherlands 11.1% of its energy is from renewable sources,⁸⁸ of which almost 2% is consumed by data centres (in total 20% of the renewable energy produced by the Netherlands is consumed by the data centre business).

Privacy and non-interference by the government guarantee data protection that renders the stored information secure.

CONCLUSIONS

This report has addressed a complex and highly technical topic that is shaping the global economy now and in the future. Indeed, data storage is already strategic and critical in terms of development, with multiple impacts not only in relation to economic opportunities but also in terms of the social, environmental, design and other impacts of the future digital economy.

The research has shown a growing relationship between storage centres and tax havens, although this is neither direct nor evenly distributed. Indeed, the geographical distribution, connectivity infrastructure and secrecy in terms of information and political affinity with the companies, suggest that this relationship is already established and will intensify in the future.

In this sense, it is urgent to create a binding agenda regarding global data governance that goes in the opposite direction to that proposed by Free Trade Agreements in terms of the digital economy: the principle of free flow of data is not the way forward. On the contrary, states need greater influence in the design of regulations and policies that allow access to data without undermining personal data-protection laws. In other words, we do not suggest that states have indiscriminate access, but rather that by complying with the regulations in force and protecting privacy, access to the communities' own information ought to be safeguarded in order to design solutions, policies, regulations and a range of tools that allow for better social development. If tax havens continue to be used as information havens, not only for the purpose of tax evasion but also to avoid sharing information, we will be facing a world with a technology industry increasingly concentrated in the hands of a few monopolies making it increasingly difficult for states to access relevant anonymized information about their citizens. The paradox will be that in a world driven by Big Data, there will be no data to develop increasingly accurate and efficient public policy.

How long will it be before the discourse of the bureaucratic State without the capacity to innovate no longer prevails over that of the entrepreneurial state, and the design of public policies is outsourced to TNCs paying millions in consultancies for information that could have been free? Paying for what once belonged to communities and should never have been taken away.

We are facing a new process of appropriation of public resources: just as intellectual property rules turned knowledge into a private good to the detriment of citizens, we now see a similar process with data. Supranational agreements and information havens are being used in order to preserve data that not only gives them an unparalleled monopolistic capacity, but also undermines the possibility of using that data for the benefit of those who have produced it: ordinary citizens.

Tax havens were and remain the main hiding place of the world's power, finance and business. They are also now being used as huge repositories of the raw material of the digital economy in order to protect it from states that could use it in the public interest. Financial capitalism and digital capitalism are now hiding together.

Given the strategic relevance of information storage this report has therefore sought to understand its causes and scope in a world where tax havens remain major centres of power.

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