REVEALED: THE CELTIC PAPER TIGER

How the Irish economy is not what it seems

By Bob Lyddon

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About the author…

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- Advice to an Electronic Money Institution about options for connecting to the Single Euro Payments Area credit transfer scheme;
- Advising Swedish and UK payment institutions on their payments and treasury operations and Anti-Money Laundering/Combatting the Financing of Terrorism duties;
- Expert witness cases on the plausibility of supposed SWIFT messages sent through the TARGET2 payment system of the European Central Bank;
- and on invoice fraud and on international 'cover payments' using the SWIFT MT103 and MT202 COV messages.

Between 2003 and 2016 Bob ran the central secretariat of the IBOS international banking alliance and expanded it to cover countries with 70% of global GDP. IBOS' business was the arrangement of systems of accounts and payments for international companies, through which to collect their international sales proceeds and to channel them through their intra-group structures. IBOS' member banks included Silicon Valley Bank and Bank of Ireland.

In 1989 Bob played a central role within the Aircraft Financing unit of Manufacturers Hanover Trust Company in the establishment of tax-advantaged finance leases for seven Airbus A320 airliners purchased by the Guinness Peat Aviation group and offered to airlines based in the USA under operating leases.

Bob Lyddon holds a Bachelor of Arts (First Class) in Modern Languages from the University of Cambridge, gained in 1980, and Master of Arts (Distinction) in History from the Open University, gained in 2022.

Bob Lyddon has been a major contributor to Global Britain with regular reports about the financing mechanisms of the EU and Eurozone, starting with the eight 'Brexit Papers' issued shortly after the Brexit Referendum: https://brexitpapers.uk/

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1. Introduction

Leo Varadkar, the Republic of Ireland Prime Minister, has put a United Ireland back on the table.[1] How would it be regarded if the president of Mexico started dreaming aloud of the reintegration of Texas into his country? It is a mark of the madness of political discourse in the British Isles and Europe that it passes without comment when an aggressive territorial claim is made against the United Kingdom of Great Britain and Northern Ireland by a party to an international treaty that agreed to respect the United Kingdom's integrity.

But then we know the extent to which the EU, with the support of Remainers in the UK and useful idiots in the Republic of Ireland, has weaponised the status of Northern Ireland so as to minimise the UK's divergence from the EU and make a Rejoining less difficult in the medium term.

To start along that road Sir Keir Starmer has held 'extensive talks' with the Democratic Unionist Party to entice them towards agreement to whatever he has in mind for the initial stage of this closer relationship with the EU if and when he becomes UK Prime Minister.[2]

Historian David Olusoga led off the fourth episode of his BBC series 'Union' in the autumn of 2023 by casting doubt on the prospect of the United Kingdom holding together, citing in particular separatist elements in Scotland.[3] He might have done better to wait: the Scottish National Party and support for Scottish independence have imploded since his series was recorded.[4]

The attack on the integrity of the UK must now shift back to Ireland, and the prospect at some future date of a referendum on a United Ireland i.e. of the United Kingdom being forced to cede part of its territory to a foreign country.

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[1] https://www.cfr.org/event/conversation-taoiseach-leo-varadkar-ireland accessed on 15 September 2023

[2] https://www.telegraph.co.uk/politics/2023/10/12/keir-starmer-labour-dup-eu-plans-brexit-irish-sea-stormont/ accessed on 12 October 2023

[3] https://www.bbc.co.uk/iplayer/episode/p0gd27lt/union-with-david-olusoga-series-1-4-union-and-disunion accessed on 12 October 2023

[4] https://www.telegraph.co.uk/news/2023/10/12/worst-has-yet-to-come-for-rapidly-vanishing-snp/ accessed on 12 October 2023

The electorate for the referendum would, of course, be limited to the eligible voters of Northern Ireland – and possibly of the Republic of Ireland to obtain their agreement to the accretion of their territory. The electorate of Great Britain would not be allowed a say.

A major enticement for the electorate of Northern Ireland would be to join the 'Celtic Tiger', a dynamically growing economy (overlooking the national bankruptcy and bailout of 2010).

The only problem is that, on closer examination, the figures that support the existence of this 'Celtic Tiger' are cooked up, and the greater part of the economy depends on magicking away corporation tax for foreign multinationals. The efforts of Ireland's greatest brains are squandered on tax avoidance – albeit on a world record scale.

That is bound to blow up again at some point and, given the Republic's rapid expansion, with an even bigger bang than in 2010. Then the people of Northern Ireland will be called upon to share the pain without having partaken in the pleasure.

Even better, they will get to pay up in euro.

2. Executive Summary

The Republic of Ireland announced recently a plan for a sovereign wealth fund.[5] Ireland's public finances are healthy, thanks to 'Ireland's success in attracting major companies with its low corporate tax rate' or, in a common person's language, tax avoidance.

To openly announce that the proceeds of this tax avoidance will be used to fund future public services is the acme of hubris, but at the same time it reflects at some level an awareness that the good times cannot go on for ever.

That is a justifiable concern as Ireland's economic model does not depend only on its low corporation tax rate, but also on its willingness to turn a blind eye to huge 'base erosion'. This is the reduction of the operating profit of a multinational's Irish subsidiary via the presentation of inflated invoices by its sister companies, increasing non-operating costs and giving rise to a much-reduced pre-tax profit and corporation tax bill.

A further dependency is on aircraft leasing in which, in true style, Ireland has engaged on a colossal scale. The 70% of the world's commercial airliner fleet that is owned in Ireland delivers huge depreciation allowances, that are made available to the Irish subsidiaries of multinationals and which further reduce their pre-tax profits and corporation tax bills.

The Irish authorities do their best to obscure the scale of tax avoidance, by issuing suspect numbers for all of Gross Domestic Product, Gross National Income and what they term Modified Gross National Income.

Ireland's economy is for 65% tied up with servicing foreign multinationals. There is a critical dependency on the corporation tax revenues from this sector, despite the effective tax rate on these profits being around 4%, not the nominal 12½%.

The dependency is even more staggering when one considers employment taxes and graduate jobs, both ones that involve direct employment by a foreign multinational or by its agents: lawyers, accountants and so on. Ireland's finest minds devote their waking hours to tax avoidance.

Hubris always turns to nemesis and Ireland will be due for another one by the late 2020s: the collapse of the Guinness Peat Aviation leasing concern in 1992 and the national bankruptcy of 2010 were the warm-up acts for that.

Then it is a question of whether, in true collegiate style, the pain gets shared around the Eurozone, the EU, the rest of the British Isles, and the rest of the world, with Ireland able to quickly rise again and pursue some further value-destroying business model - to its own benefit and to the dismay of those who helped them out of their hole last time around.

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[5] https://www.reuters.com/markets/europe/how-irelands-new-sovereign-wealth-fund-will-work-2023-10-10/ accessed on 16 October 2023

3. Size of Ireland's economy and adjustment to it by the Irish Central Statistics Office

The distortion of Ireland's Gross Domestic Product thanks to its attraction of foreign multinationals is well known.

We can quote the recent work of Julian Jessop entitled 'Are Irish incomes really twice those of the UK?'[6] and our own work co-authored with Ewen Stewart of Walbrook Economics and issued through Global Britain in 2019 'The Irish economic miracle – fact or fiction?'.[7]

Trading Economics have stated Irish GDP in 2020 as US$425.85 billion, in 2021 as US$504.18 billion and in 2022 as US$529.24 billion.[8] That translates into €404.56 billion, €478.97 billion and €502.78 billion respectively.

The Irish Central Statistics Office (CSO) has issued further information that purports to strip out the activity relating to foreign multinationals.[9] They first concentrated on Gross National Income or GNI, by stripping out 'profits that are generated here but then go straight out to the owners of companies abroad'. It is to be noted that the word 'profits' is used and ones that go 'straight' to company owners: one would normally assume these to be dividends paid out of post-tax profits, and paid 'straight' to an ultimate parent and not to some intermediate holding company. However, we examine further below whether this explanation can hold water.

The CSO then issues a further version which it calls Modified Gross National Income or MGNI, by stripping out 'depreciation on two kinds of assets in order to exclude globalisation effects: Intellectual property (IP) and leased aircraft'. Does this formulation hold water either? Since when was depreciation part of GDP, GNI, or MGNI? All three are measures of the total of goods and services output by the economy, whereas depreciation is an accounting adjustment that serves (i) to spread the cost of an asset over its useful life rather than construing it as a lump-sum expense in the year it was acquired; and (ii) to enable the owner to reduce its corporation tax by construing the annual depreciation charge as a cost that it can put through its Profit and Loss Account.

At any rate here are the adjusted figures as issued by the Central Statistics Office:

	2020	2021	2022
Gross Domestic Product (GDP)	€404.56 billion	€478.97 billion	€502.78 billion
Gross National Income (GNI)	€284.92 billion	€324.11 billion	€336.52 billion
Modified Gross National Income (GNI)	€204.86 billion	€233.28 billion	€248.88 billion

[6] https://julianhjessop.com/2023/04/17/are-irish-incomes-really-twice-those-of-the-uk/ accessed on 2 October 2023

[7] http://www.lyddonconsulting.com/the-irish-economic-miracle-fact-or-fiction/ accessed on 2 October 2023

[8] https://tradingeconomics.com/ireland/gdp accessed on 3 October 2023

[9] https://www.cso.ie/en/interactivezone/statisticsexplained/nationalaccountsexplained/modifiedgni/ accessed on 3 October 2023

Analysis of differences between GDP and GNI, and between GNI and MGNI

We can then analyse the difference between GDP and GNI, which is supposedly attributable to these 'profits that are generated here but then go straight out to the owners of companies abroad':

	2020	2021	2022
Amount difference: GDP less GNI	€119.64 billion	€158.46 billion	€166.26 billion
Difference as a percentage of GDP	29.57%	32.33%	33.07%
GNI as a percentage of GDP	70.43%	67.67%	66.93%

If this remittance of money abroad is a dividend, then it will have been taxed at 12.5%. In that case the pre-tax amounts and the amounts of corporation tax deducted should have been:

	2020	2021	2022
Pre-tax amount	€136.73 billion	€181.10 billion	€190.01 billion
Corporation tax amount @12.5%	€17.09 billion	€22.64 billion	€23.75 billion
Post-tax amount	€119.64 billion	€158.46 billion	€166.26 billion

These amounts exceed in each year the actual corporation tax collected, according to Irish Tax and Customs, upon which we can calculate the presumed pre-tax profit by multiplying the tax amount by eight:

	2020	2021	2022
Corporation tax receipts @12.5%	€11.83 billion	€15.32 billion	€22.65 billion
Presumed pre-tax profit	€94.64 billion	€122.56 billion	€181.20 billion

We can move on to identify the difference between GNI and MGNI, which is supposedly attributable to 'depreciation on two kinds of assets in order to exclude globalisation effects: Intellectual property (IP) and leased aircraft':

	2020	2021	2022
Amount difference: GNI less MGNI	€80.06 billion	€90.83 billion	€87.64 billion
Difference as a percentage of GNI	28.10%	28.02%	26.04%
MGNI as a percentage of GNI	71.90%	71.98%	73.96%

Finally, measuring MGNI against GDP, we can extract the total impact of the supposed stripping out by the CSO of elements relating to foreign multinationals:

	2020	2021	2022
Amount difference: GDP less MGNI	€199.7 billion	€245.69 billion	€253.90 billion
Difference as a percentage of GDP	49.36%	51.30%	50.50%
MGNI as a percentage of GDP	50.64%	48.70%	49.50%

By the admission of the Irish authorities themselves, then, the economy is composed for over 50% of the business of servicing foreign multinationals, but we cannot accept these statements by the CSO at face value due to the presence of significant disconnects.

Disconnects in CSO statements

The 'profits that are generated here but then go straight out to the owners of companies abroad' cannot be post-tax profits, as the pre-tax amount would have been €190.01 billion in 2022, yielding corporation tax at 12.5% of €23.75 billion, €1.01 billion more than Ireland's total receipts of corporation tax in 2022 of €22.65 billion.

Instead it must be presumed that these 'profits' include payments made by the Irish companies (i) that were made pre-tax and indeed were tax-deductible in Ireland; and (ii) that were not necessarily made 'straight' to the ultimate parent company of the group to which to Irish company belongs. The payments may have been made to a sister subsidiary acting as the direct, foreign owner of the Irish subsidiary, or they may have been made to a sister subsidiary that was not the direct, foreign owner. Only if the payment was made to the direct, foreign owner could it have been a dividend. Otherwise it could have been a royalty payment for usage of Intellectual Property, interest on an intercompany loan or payment for a commercial supply, these being the major headings for intercompany payments. In other words, what the Irish authorities categorises as 'profits' of the Irish company are costs of the Irish company and revenues (and part of the profits) of whoever the amounts were paid to.

There is a further disconnect in that neither of the 'depreciation on two kinds of assets in order to exclude globalisation effects: Intellectual property (IP) and leased aircraft' creates or reduces gross economic activity, be that GDP ('gross domestic product') or GNI ('gross national income'). Depreciation results in no direct payments, either to a foreign owner or to anyone else: they are a charge to the Profit and Loss Account of the Irish company of a portion of the cost of one of these assets. This reduces the taxable profit by the amount of the charge, and reduces the corporation tax by 12.5% of the charge. In that sense they are a reduction of a payment to the Irish Tax and Customs and an enablement of the building-up of the net worth of the claimant of the allowances, but neither of these affect the gross amounts of sales of goods and services in an economy.

4. Recent information from Irish Tax and Customs

Irish Tax and Customs issued a summary of Corporation Tax revenues in May 2023, whose headlines were:

- Corporation tax collected in 2022 was €22.7 billion and in 2021 it was €15.3 billion;
- 'Intangible asset claims were €131.3 billion, of which 91% were made by foreign multinationals';
- Corporation tax was 27.5% of all tax collected in 2022;
- The top 10 companies paid 57% of corporation tax collected in 2022 compared to 53% in 2021;
- Taxable profits declared in 2021 were €250.5 billion;
- 'Foreign multinationals account for 33% of employment and 52% of employment taxes of corporate employers'.

There is another major disconnect here: corporation tax collected in 2021, at €15.3 billion, implies taxable profits of €122.4 billion, not the €250.2 billion quoted. Corporation tax at 12.5% should have yielded €31.31 billion, over double what was actually collected.

The next disconnect is the contention that Ireland is playing host to major amounts of valuable Research and Development work, which logically would later translate into valuable intellectual property and concomitant depreciation allowances being claimed on them. Instead the total of Research and Development credits claimed in 2021 across the entire Irish economy was only €0.7 billion.

This is the first reason why we do not believe that the difference between GNI and MGNI contains a meaningful amount of depreciation in respect of intellectual property.

The second reason is that our research into aircraft leasing shows that this industry could easily on its own deliver €87.64 billion of depreciation allowances.

Depreciation – the difference between GNI and MGNI

This leads us to a closer examination of the depreciation that is claimed by the CSO to be the difference between GNI and MGNI.

It is given as €87.64 billion , supposedly for the depreciation of intellectual property and leased aircraft. We need to re-state that depreciation is not part of GDP, so it is not part of GNI either.

Depreciation of intellectual property means an Irish company having developed intellectual property of its own and depreciating that, which reduces its Irish taxable profit and payments of Irish corporation tax. The very low amount of Research and Development credits claimed in 2021 tells a different story. In our understanding the bigger play in intellectual property is for a multinational to vest a master licence for an asset into a subsidiary in a jurisdiction such as Panama, Belize or Nevis, and for that subsidiary in turn to grant a sub-licence for usage of the asset to the Irish company. This justifies a large stream of tax-deductible royalty payments by the Irish company to its foreign sister companies for the usage of intellectual property. The major action in intellectual property is royalty payments, not depreciation.

This interpretation is backed up by the size of the 'Intangible asset claims' by 'foreign multinationals' of €119.48 billion (91% of €131.3 billion). These exceeded the entire €87.64 billion for the depreciation of intellectual property and leased aircraft, by €31.84 billion. Irish Tax and Customs do not break the €119.48 billion up between depreciation and royalty payments - a further disconnect.

We will test later whether it is likely that the majority, if not all, of the depreciation amount of €87.64 billion relates to aircraft leasing, meaning in turn that the costs deducted by 'foreign multinationals' in respect of intellectual property are indeed €119.48 billion and are all royalties, not depreciation.

All that we can conclude at this juncture is that both treatments for intellectual property may be in operation:

1. Depreciation of intellectual property that the Irish company owns;
2. Payments of royalties by the Irish company to foreign sister companies for usage of intellectual property owned by those foreign sister companies.

However, we already have an indicator that (2) is a much larger amount than (1).

Avenues for super-advantageous tax treatment of intellectual property

One can say with some certainty that the foreign sister companies receiving the royalties will be domiciled in jurisdictions whose taxation regimes are even more beneficial than that of Ireland, perhaps even having no corporation tax at all, or having an especially low rate of corporation tax on royalty revenues.

It would be speculation, though, to moot that the same piece of intellectual property could be both depreciated by the Irish company and cause a royalty payment to be made to the foreign sister company as well, a form of 'double dip' that has historically been common in aircraft financing.[10] Such a treatment in the case of intellectual property would magnify the charges that could be booked to the Profit and Loss Account of the Irish company, with a consequentially magnified reduction in the taxable profit and payment of corporation tax.

A further avenue available to companies is to exaggerate the value of intellectual property. This is an area where it is difficult to market-test the value of an asset that has been patented, and which in consequence no competitor can exactly replicate. An exaggerated value will in turn trigger higher royalty payments and higher depreciation charges. Irish Tax and Customs might be expected to challenge inflated valuations, as they trigger lower corporation tax receipts in Ireland. That, however, would be an example of killing the goose that lays the golden eggs - interfering with a business model that delivers '33% of employment and 52% of employment taxes of corporate employers'. Much better to continue to collect the golden eggs, on the basis that 12.5% of something is better than 25% of nothing.

[10] A 'double dip' leasing transaction involves the same aircraft being depreciated in two jurisdictions simultaneously. It was common for the first lease to be put in place in Japan, where it was defeased – meaning that the lessee's obligations were paid up in full at the outset via the placing of a bank deposit in the Channel Islands. The amount deposited, with accruing interest rolling up, would provide the investors after 15 years with 101% of the amount they had initially invested, which would normally be 15% of the aircraft's value. In effect the Japanese investors were able to obtain depreciation allowances on a bank balance, not an aircraft, the rights over which were ceded to the parties involved in the second lease.

The fact that the percentage of employment taxes derived from foreign multinationals is so much higher than the percentage of employee jobs in the sector demonstrates that the jobs are high-salary. Even this high figure only records those directly employed by the sector.

One needs to add on the advisors: the lawyers, accountants, tax advisers, professional services firms and so on who are garnering their revenues from the sector. Could we be looking at '40% of employment and 70% of employment taxes of corporate employers' as the total for running and servicing this 'leprechaun economy'? For sure Ireland's educational elite are primarily deployed towards this sector, either directly in it or servicing it. Does that leave the remaining 60% of employees – everyone else – struggling away in low-income jobs that deliver only 30% of employment taxes?

5. Building of a 'strawman' for the true size of Ireland's business with foreign multinationals

There is more here than meets the eye. We need to cut through their numbers issued by the Irish authorities and set out a strawman for the true situation of the size of Ireland's foreign multinational sector – its revenues, genuine costs, other 'costs', pre-tax profit, tax payments and post-tax profits.

The Irish authorities do provide some of these figures, from which we can triangulate the others.

Let's start with the statement from Irish Tax and Customs that 'The top 10 companies paid 57% of corporation tax collected in 2022', meaning 57% of €22.65 billion, or €12.91 billion. The major leap is to assume that the corporation tax payments of foreign-owned companies and those of this 'Top 10' are one and the same, even though some of the 'Top 10' may be Irish: the payments by the two or three indigenous businesses in the 'Top 10' will be matched and possibly exceeded by the tax payments from the 100+ foreign-owned companies outside the 'Top 10'.

If foreign-owned companies paid tax of €12.91 billion, their pre-tax profits would be eight times that figure, or €103.28 billion.

We calculated above that the difference between GDP and MGNI was €253.90 billion in 2022. This is the version, from the Irish authorities, of all economic activity connected with foreign multinationals. If we accept this figure as the sales of goods and services by foreign multinationals, we can derive a basic Profit and Loss Account in Ireland for these companies as follows:

A	Sales attributable to foreign multinationals	€253.90 billion	CSO (GDP less MGNI)
B	Tax-deductible costs except depreciation	(€ 62.98 billion)	A minus C
C	Operating profit	€ 190.92 billion	E - D
D	Depreciation of intellectual property and aircraft	(€ 87.64 billion)	CSO (GNI less MGNI)
E	Pre-tax profit of 'Top 10'	€103.28 billion	Irish Tax & Customs
F	Corporation tax at 12.5%	€12.91 billion	E x 12.5%
G	Post-tax profit	€90.37 billion	E minus F

Figures A, D and E come from the Irish authorities. The other figures can be calculated from them, including the 'Tax-deductible costs except depreciation'. The 'Operating profit' (C) is the 'Pre-tax profit' (E) with the 'Depreciation of intellectual property and aircraft' (D) added back (it is E minus D because D is a negative figure). Then the 'Tax-deductible costs except depreciation' are simply the difference between A and C: €253.90 minus €190.92 billion. Total tax-deductible costs are €150.62 billion.

We must question:

- The Sales amount itself, because it is derived from the CSO's figures for GDP, GNI and MGNI, any or all of which could be fallacious;
- The 'Tax-deductible costs' could involve royalties paid for usage of intellectual property, be artificially inflated, and therefore better be counted below Operating profit, together with any and all other tax-avoiding elements;
- Whether any of the depreciation amount of €87.64 billion pertains to intellectual property.

Reconciliation with an effective tax rate of 4.5% or less

The table above does not, as it stands, mesh with the widely-held contention that the 'effective tax rate' is between 2.25% and 4.5%.[11] This is the rate of tax on the genuine Operating profit. The table shows it to be 6.8%.

The Operating profit should be arrived at after the deduction only of costs that have no degree of artificiality about them. That would include factory/laboratory running costs, staff and administrative costs, logistics and transportation costs, and salesforce commissions.

Artificial cost elements should be appear below the Operating profit, between it and the Pre-tax profit. This categorization of artificial cost elements might allow for the equation to be solved:

Operating profit x 4% = Pre-tax profit x 12.5%

In other words the artificially-lowered Pre-tax profit is taxed at 12.5%, and this results in the same amount of tax as the genuine, Operating profit x 4%.

We know the extent claimed by Irish Tax and Customs of artificial costs for depreciation of intellectual property and aircraft, but we do not know for certain the artificial costs for royalties and any other elements.

If we run our table backwards in order to solve for the above equation, the Operating profit must be the Pre-tax profit multiplied by 12.5 and divided by 4 = €322.75 billion. We retain the figure for 'Sales', and all the figures from and including 'Depreciation of intellectual property and aircraft'.

A figure of €131.83 billion for 'Royalties for usage of intellectual property' balances the sums, and is recorded below 'Operating profit' as one of the artificial, tax-avoiding elements:

Sales	€253.90 billion
Genuine costs	+€68.85 billion
Operating profit	€322.75 billion
Royalties for usage of intellectual property	(€131.83 billion)
Depreciation of intellectual property and aircraft	(€87.64 billion)
Pre-tax profit	€103.28 billion
Corporation tax at 12.5%	€12.91 billion
Post-tax profit	€90.37 billion

The artificial costs for 'Royalties for usage of intellectual property' of €131.83 billion are not so far away from the figure for 'Intangible asset claims' by 'foreign multinationals' of €119.48 billion given by Irish Tax and Customs: that fact is indicative of the figure's plausibility.

However, the 'Genuine costs' come out as an income: the 'Operating profit' is higher than the 'Sales', by €68.85 billion. This is not as big a difficulty as it may sound when the figure for 'Sales' is the result of a circular calculation of MGNI from GDP based on deducting back 'Depreciation of intellectual property and aircraft'. In other words the figure for 'Sales' is itself unreliable: the real figure must be higher so as to recognise a realistic level of operating costs, i.e. the counterpart of the figure of €62.98 billion in the preceding table.

[11] https://en.wikipedia.org/wiki/Corporation_tax_in_the_Republic_of_Ireland accessed on 12 October 2023

Revising the 'strawman' based on the actual sales booked by foreign multinationals

Our next step is to create a 'strawman' that includes a realistic level of 'Genuine costs', that solves for the equation, and that uses figures issued by the authorities where they are plausibly within the same range as ones that we have calculated ourselves. On this basis we have been content to attribute 91% of Irish Tax and Customs' 'Intangible Asset Claims' of €131.3 billion - €119.5 billion - to royalty payments, and allocate the €87.6 billion of depreciation to aircraft alone.

The key step is to project a figure for the 'Sales' booked in Ireland by foreign multinationals that is not based on the CSO's circular data. The 'Sales' could be higher than what is contained in Ireland's GDP, for whatever reason, just as other figures issued by the Irish authorities are suspect.

We need to get to the 'Sales' of these foreign multinationals arising from their stock-in-trades, not from the peripheral trade of aircraft leasing, in which they only indulge to save tax. Later we will test the 'Sales' figure against our own 2019 work for Global Britain.

The aircraft lease rentals act as part of the overall tax-saving model, but they are not directly attributable to the foreign-owned multinationals, just like the interest on the debt raised to part-finance the aircraft is not.

We will come back later to how the aircraft lease rentals fit in, but for now we concentrate on the annual 'Sales' directly attributable to foreign-owned multinationals and try to create a model that is more plausible than the one offered by the Irish authorities. We use the CSO's figures regarding royalties and depreciation, and the same figures as before for pre-tax profit, corporation tax and post-tax profit, but we add a 'placeholder' figure of €100 billion on top of the CSO's figure (which is GDP less MGNI) for the size of the part of the Irish economy connected to foreign multinationals.

'Sales' rise to €353.9 billion. The 'Operating profit' of €310.4 billion results from adding the tax, depreciation and royalties back to the post-tax profit of €90.4 billion. The difference between 'Sales' and this 'Operating profit' is the 'Genuine costs' of €43.5 billion:

A	Sales	€353.9 bn	Previous table + €100 bn
B	Genuine costs	(€43.5 bn)	A minus C
C	Operating profit	€310.4 bn	F + E + D
D	Royalties for usage of intellectual property	(€119.5 bn)	91% CSO Intangible Asset Claims
E	Depreciation of aircraft	(€87.6 bn)	CSO figure – all for aircraft
F	Pre-tax profit	€103.3 bn	As per previous table
G	Corporation tax at 12.5%	€12.9 bn	As per previous table
H	Post-tax profit	€90.4 billion	As per previous table

Let's call this Version 1, as we will compare it with a further version towards the end of this study.

This version satisfactorily solves the equation and uses all the figures that the Irish authorities have made available. The effective rate of corporation tax is 4.16% of the Operating profit, which is derived from the genuine business, prior to 'base erosion' as it is known and to the offsetting of depreciation allowances from investments that have nothing to do with the core business. However, this remains a 'strawman' in which the 'Sales' is an estimate, and the 'Genuine costs' are calculated as the difference between the 'Sales' and the 'Operating profit'.

Sanity check of the depreciation amount and of lease rentals from the Irish aircraft leasing industry

We can now interrogate this 'strawman' in the light of the aircraft leasing market and the claim that Irish companies are the registered owners of 70% of the world's commercial airliner fleet.

We can test whether the annual depreciation charge in the above table is in line with a model whereby Irish Limited Liability Partnerships (LLPs) acquire these aircraft from new, with the Irish subsidiary of a foreign multinational as their General Partner, entitled to claim the depreciation allowances on the whole aircraft, whether they inject its full cost or only 1% of it.

The accounts of LLPs are not in the public domain, nor are statements of their beneficial owners. The leap-of-faith here is acceptance of the contention that, since foreign-owned companies have by far the lion's share of taxable profits in Ireland, it is only they who have the capacity to use the depreciation allowances available on this enormous fleet of aircraft. A loss-making company, receiving depreciation allowances, can only add them to their Tax Loss Carry Forward, in the hope that at some future point they will have profits to offset the allowance against. If they don't, or if there is an expiry date to the usage of the allowance, then it is of no value to them.

The extrapolation of the base contention is that aircraft leasing has only built up in Ireland to the extent it has because of the size of the demand from foreign multinationals for allowances to reduce corporation tax.

In other words, aircraft leasing is a key component in the tax-sparing model for foreign multinationals. It should not therefore be counted within MGNI – the supposedly free-standing portion of the Irish economy that is not tied into foreign multinationals.

We will review later how the lease rentals should be woven into the structure of GDP, GNI and MGNI chosen by the CSO to reflect Ireland's economy. The lease rentals on a fleet of this size could be in the region of €100 billion per annum, and we will look at the treatment of that, of the depreciation, and of the interest on the debt taken on to buy the aircraft.

It is not our role, given the shortcomings of the reporting on privately-held Irish companies and partnerships, to state what the true numbers are, but it seems unlikely that what the Irish authorities have put into circulation holds water. It seems more likely that the amount of GDP attributable to foreign-owned companies is higher and for the reasons the Irish authorities use to justify deducting aircraft depreciation from GNI – 'The largest international aircraft lessors are based in Ireland and lease the commercial planes that fly all over the world. Almost all of the lessors here are foreign owned and so the profit does not stay in the Irish economy. The planes themselves are owned in Ireland, even though they are manufactured abroad and generally operate overseas'.

Aircraft is a global business. It is being dog-legged through Ireland for tax purposes, the purpose being to reduce the corporation tax liability of foreign-owned companies in Ireland. From an Irish perspective it sits together with the sales of foreign multinationals in the 'offshore' part of the economy, not the 'onshore' part which is quantified as MGNI.

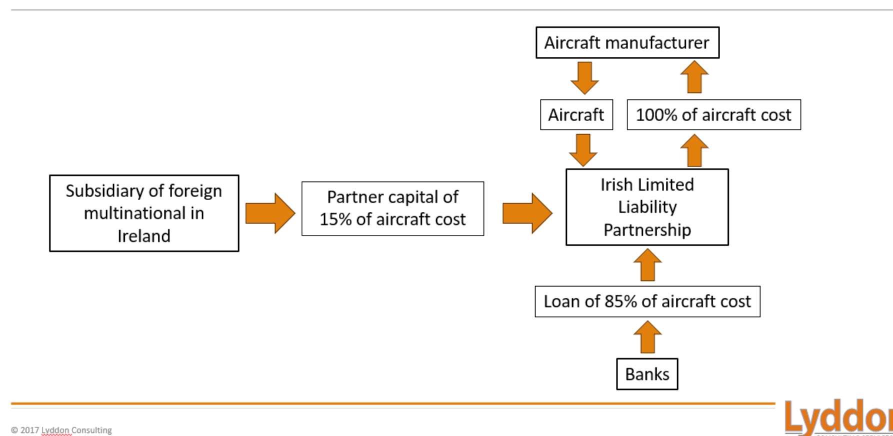
6. What aircraft leasing is

For an examination of aircraft leasing we have to move into US$, the currency in which aircraft business is transacted. Totals are then translated back into euro so as to integrate them with the figures about Ireland's economy.

What is aircraft leasing in an Irish context? An aircraft is purchased from Boeing or Airbus by a specially-incorporated legal entity in Ireland. The type of entity is chosen such that a separate and existing legal entity can claim depreciation allowances on the aircraft and use them to reduce their corporation tax.

This legal entity need only inject a fraction of the purchase price of the aircraft in order to claim the entirety of the depreciation allowances. The remainder of the purchase price is raised through debt.

This diagram illustrates how the arrangement is structured, based on the specially-incorporated legal entity being an Irish Limited Liability Partnership (LLP):



The aircraft used for illustrative calculations is a Boeing B737 with a purchase price of US$120 million.

The General Partner in the LLP - the Irish subsidiary company of Big Tech or Big Pharma - is entitled to claim the depreciation allowances on the aircraft, which are 1/8th of the aircraft's cost per annum over 8 years to a residual value of zero. The General Partner can claim these allowances in full even if they only contribute 15% of the aircraft's cost into the LLP, and the remaining 85% is borrowed by the LLP.

Since the loan the LLP takes up is not under any circumstances repayable by the General Partner (known as 'without recourse'), and since it is the LLP that legally owns the aircraft, the loan does not have to appear on the balance sheet of the foreign-owned company, nor on that of its direct and/or ultimate parent companies. Only the 15% investment need appear.

Economics for the General Partner

With reference to a B737, the General Partner claims the depreciation allowances on the US$120 million aircraft even though it has injected only US$18 million. These allowances are for 1/8th of the purchase price annually for 8 years – US$15 million per annum - after which the aircraft has a value of zero in the books of the LLP: it has been fully depreciated.

The General Partner reduces its taxable profit by the amount of the depreciation allowances, and saves Irish corporation tax of 12.5% of the depreciation allowances – US$1.875 million per annum.

The General Partner's other requirement is to receive back the 15% of the purchase price it injected but no more: it does not also earn income on the transaction over its 15-year term. In effect the General Partner makes an interest-free loan into the LLP for 15 years, and this creates a subsidy. This subsidy is expressed as a reduction in the lease rental that the lessee of the aircraft has to pay.

Here is an example of the transaction from the General Partner's point of view, where the depreciation allowance is US$15 million per annum (1/8th of the aircraft's purchase price) and the tax saving is 12.5% (also 1/8th) of the depreciation allowance, or US$1.875 million:

Using Boeing 737		
Current market value	120,000,000	for a single aircraft
Debt	102,000,000	
Equity	18,000,000	
01/10/2015	-18,000,000	
01/10/2016	1,875,000	
01/10/2017	1,875,000	
01/10/2018	1,875,000	
01/10/2019	1,875,000	
01/10/2020	1,875,000	
01/10/2021	1,875,000	
01/10/2022	1,875,000	
01/10/2023	1,875,000	
01/10/2024	0	
01/10/2025	0	
01/10/2026	0	
01/10/2027	0	
01/10/2028	0	
01/10/2029	0	
01/10/2030	18,000,001	
IRR	6.80%	

While there may other arrangements for how the General Partner receives its capital back, the standard method is that there is a buy-out clause for the aircraft at the end of the lease. This buy-out right is owned by the aircraft's lessee, and its being set at 15% of the original Fair Market Value incentivises the lessee to exercise it. Neither the LLP nor the General Partner want to be left with a 15-year old aircraft.

What happens to the aircraft

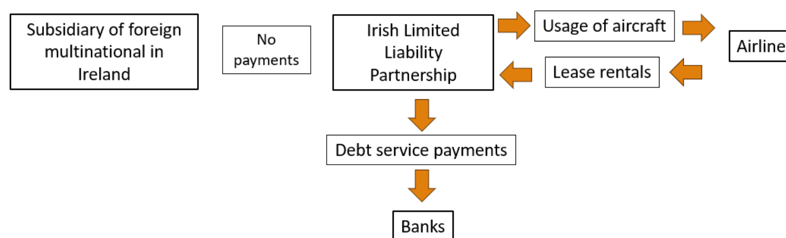
The question is then what happens to the aircraft, because the General Partner has no involvement in its running.

The aircraft needs to used by an airline. This can come about in two ways:

1. The airline leases the aircraft directly from the LLP;
2. The aircraft is subject first to a Head Lease to an aircraft leasing concern, and then to a Sub-Lease to an airline.

The structure under (1) above is as follows:

Lease to an airline



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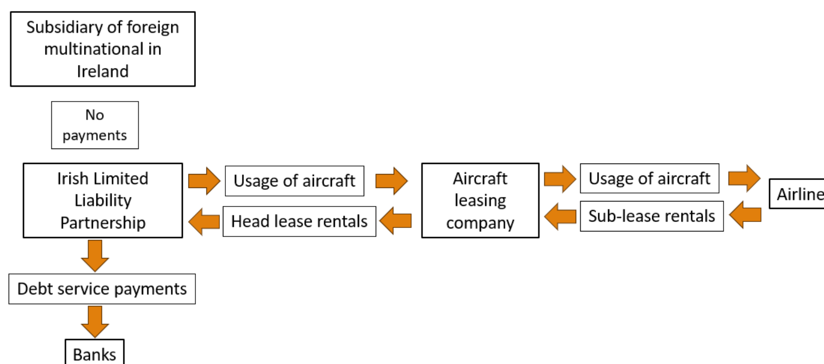
The term of the lease is identical to the term of the financing. The airline would have a buy-out option at Year 15 for US$18 million, and it might have buy-out options earlier, from Year 8 onwards, for higher amounts, calculated such that the General Partner receives its US$18 million and then the balance of debt is paid off.

The structure under (2) above is as follows:

Head lease to an aircraft leasing company



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The term of the head lease to the aircraft leasing concern is again identical to the term of the financing, and the aircraft leasing concern would enjoy similar buy-out options. The sub-leases, however, could be of any term, and indeed the aircraft might be leased out to several different airlines in succession.

The sub-leases would on that basis be known as 'operating leases', with the head lease being known as a 'finance lease'. The airlines would have no buy-out rights. An 'operating lease' might be completely 'dry': the airline supplies all the crew and ancillary services. It could also be 'wet': the aircraft leasing concern supplies all the crew and ancillary services. There are degrees of 'wetness' in between.

Aggressiveness of the depreciation schedule in Ireland

An important point to be mentioned is that the depreciation allowances available in Ireland are very attractive to the General Partner, being known as '8-year, straight-line, zero residual'. This means:

- The aircraft is depreciated over 8 years;
- It is depreciated pro-rata at a rate of 1/8th of its purchase price per annum;
- It is depreciated down to zero, with no assumed residual value.

Given that aircraft can have an operating life of 20+ years, this is an aggressive schedule. A schedule that was more aligned to the value of the aircraft would be 12-year, 10% declining balance:

- The aircraft is depreciated over 12 years;
- It is depreciated annually by 10% of its depreciated value at the start of the year;
- It is not depreciated to zero: the calculation leaves a residual balance of 28% of the purchase price at the end of the lease.

Compared to an Irish lease, the depreciation allowances are smaller in every year, even the first one, and they total only 72% of the purchase price, leaving a 28% residual value:

Purchase price	120,000,000	
Annual depreciation	10%	
	Depreciation	Balance
Year 1	12,000,000	108,000,000
Year 2	10,800,000	97,200,000
Year 3	9,720,000	87,480,000
Year 4	8,748,000	78,732,000
Year 5	7,873,200	70,858,800
Year 6	7,085,880	63,772,920
Year 7	6,377,292	57,395,628
Year 8	5,739,563	51,656,065
Year 9	5,165,607	46,490,459
Year 10	4,649,046	41,841,413
Year 11	4,184,141	37,657,272
Year 12	3,765,727	33,891,544
		28%

7. Market-wide depreciation allowances for all LLPs

Now we can move on to the total of the depreciation allowances available to all General Partners in LLPs if 70% of the world's commercial airliner fleet is put through Irish LLPs structures, and with several other assumptions:

- The values of the aircraft are as per Airbus' and Boeing's catalogues;
- The breakdown by aircraft type is exactly as per the reported global deliveries of Airbus and Boeing.

We begin in each case with the purchase price, which is for a single aircraft. The airline or the aircraft leasing concern may have negotiated a bulk discount with the manufacturer but the lease is always based on the Fair Market Value for a single aircraft:

- This increases the depreciation allowances and the tax that is saved;
- The airline or the aircraft leasing concern can extract the difference between the order price and the Fair Market Value by selling the order to a further intermediary company, which sells it on to the LLP;
- The LLP pays the Fair Market Value to the intermediary company, and the intermediary company pays the order price, crystallizing a profit which is then either:
    - Paid to the airline or the aircraft leasing concern; or
    - Used to subsidize the lease rentals paid by the airline or the aircraft leasing concern to the LLP.

The annual depreciation is $1/8^{th}$ of the purchase price and the tax eliminated is $1/8^{th}$ of the depreciation.

The units coming to Ireland (EI) are 70% of the manufacturer's global deliveries, and the total depreciation and total tax eliminated are the figures per unit multiplied by the number of units.

Airbus data is taken from its own information on orders and deliveries on https://www.airbus.com/en/newsroom/press-releases/2023-01-airbus-reports-2022-commercial-aircraft-orders-and-deliveries and from https://www.statista.com/statistics/273962/prices-of-airbus-aircraft-by-type/

Boeing data is taken from https://www.statista.com/statistics/273941/prices-of-boeing-aircraft-by-type/ and from Boeing's Investor Relations information https://investors.boeing.com/investors/overview/default.aspx

Depreciation of Airbus aircraft

Airbus A220	90,000,000	Airbus A320	120,000,000
Annual depreciation	11,250,000		15,000,000
Tax eliminated per unit	1,406,250		1,875,000
Units coming to EI p.a.	35		338
Total depreciation	393,750,000		5,071,500,000
Tax eliminated in EI	49,218,750		633,937,500

Airbus A330	240,000,000	Airbus A350	320,000,000
Annual depreciation	30,000,000		40,000,000
Tax eliminated per unit	3,750,000		5,000,000
Units coming to EI p.a.	13		39
Total depreciation	378,000,000		1,540,000,000
Tax eliminated in EI	47,250,000		192,500,000

Airbus A380	440,000,000
Annual depreciation	55,000,000
Tax eliminated per unit	6,875,000
Units coming to EI p.a.	4
Total depreciation	192,500,000
Tax eliminated in EI	24,062,500

Total annual depreciation	7,575,750,000
Total tax eliminated in EI	946,968,750

Depreciation of Boeing aircraft

Boeing 737	120,000,000	Boeing 767	218,000,000
Annual depreciation	15,000,000		27,250,000
Tax eliminated per unit	1,875,000		3,406,250
Units coming to EI p.a.	260		25
Total depreciation	3,906,000,000		686,700,000
Tax eliminated in EI	488,250,000		85,837,500

Boeing 777	346,000,000	Boeing 787	250,000,000
Annual depreciation	43,250,000		31,250,000
Tax eliminated per unit	5,406,250		3,906,250
Units coming to EI p.a.	25		34
Total depreciation	1,089,900,000		1,050,000,000
Tax eliminated in EI	136,237,500		131,250,000

Total annual depreciation	6,732,600,000
Total tax eliminated in EI	841,575,000

Depreciation totals and analysis

COLLATION OF AIRBUS & BOEING DATA	
Combined depreciation p.a.	14,308,350,000
Combined tax eliminated p.a.	1,788,543,750
TOTAL FOR THE REPUBLIC OF IRELAND	
Number of parallel years	8
EI total depreciation annually	114,466,800,000
Minus arbitrary discount of 25%:	85,850,100,000
EI total tax eliminated annually	14,308,350,000
Minus arbitrary discount of 25%:	10,731,262,500

The important points here are:

- At any one time LLPs are claiming depreciation allowances for this year's new aircraft and for those delivered in the preceding seven years;
- As a result the total of depreciation allowances being claimed by LLPs in any one year is eight times what is claimed for one year;
- The same applies to the corporation tax being eliminated;
- We have applied an arbitrary 25% discount to the results of calculations based on this year's price list and deliveries, to take account for lower prices in past years and possibly fewer deliveries, and one or two other factors that are mentioned in relation to the lease rentals below.

After that discount we have a depreciation figure for the whole aircraft leasing business of US$85.85 billion, or €81.56 billion, compared to the Irish Central Statistical Office's figure of €87.64 billion as the amount of depreciation on aircraft and intellectual property that represents the difference between Irish GNI and MGNI.

We stated above our belief that the majority of that figure related to aircraft, and that the €119.48 billion of 'Intangible Asset Claims' disclosed by the Irish Tax and Revenue (91% of €131.3 billion) related to payments of royalties.

These figures appear to bear that out – LLPs working on behalf of foreign multinationals generate over €80 billion of depreciation allowances per annum for them and save them over €10 billion of corporation tax.

8. Lease rental incomes

Now we come to the rentals that these leased aircraft will generate. These rentals are paid to an Irish-registered legal entity and therefore form part of Irish GDP. Since they only come to exist because of the need to generate depreciation allowances and save tax for foreign multinationals in Ireland, the lease rentals need to be considered as part of the 'Leprechaun Economy', to use Julian Jessop's phrase.

The lease rentals should be classified as outside of MGNI – which the Irish Central Statistical Office holds out as being the size of the Irish economy sanitized of 'globalisation effects', itself a sanitised phrase for helping multinationals avoid tax.

The amount of the lease rentals into the LLP is driven primarily by the debt service payments on the loan the LLP takes up for 85% of the purchase price of the aircraft.

For ease of reference we have adopted a common template for this loan, across all the aircraft types, although in reality there will be some variations:

- The loan term matches the lease - 15 years;
- The loan is a monthly annuity, with payments at the beginning of the month;
- The loan pays down to zero – there is no 'balloon payment', meaning a larger final capital payment;
- The buy-out option is for 15% of the purchase price, but this will all go to repaying the General Partner's capital;
- The interest rate is 6%, and in US$.

Lease rentals on Airbus

AIRBUS

	A-220	A-320	A-330	A-350	A-380
Purchase Price	90,000,000	120,000,000	240,000,000	320,000,000	440,000,000
Loan	76,500,000	102,000,000	204,000,000	272,000,000	374,000,000
Monthly rental	642,339	856,452	1,712,903	2,283,871	33,140,323
Units	35	338.1	12.6	38.5	3.5
Mthly rent stream	22,481,857	289,566,322	21,582,583	87,929,042	10,991,130
Ann rent stream	269,782,287	3,474,795,862	258,990,996	1,055,148,502	131,893,563

Lease rentals on Boeing

BOEING

	B-737	B-767	B-777	B-787
Purchase Price	120,000,000	218,000,000	346,000,000	250,000,000
Loan	102,000,000	185,300,000	294,100,000	212,500,000
Monthly rental	856,452	1,555,887	2,469,436	1,784,274
Units	260.4	25.2	25.2	33.6
Mthly rent stream	223,020,024	39,208,359	62,229,781	59,951,619
Ann rent stream	2,676,240,291	470,500,309	746,757,372	719,419,433

Totals of lease rentals and analysis

Annual rental stream – Airbus	5,190,611,10
Annual rental stream – Boeing	4,612,917,405
Combined annual rental stream	9,803,528,615

Given that the leases have a 15-year life, the total of lease rentals coming into LLPs per annum is fifteen times the combined annual rental stream:

Combined annual rental stream	9,803,528,615
Years of deals running in parallel	15
Ireland's total annual revenue stream	147,052,929,224
25% discount	-36,763,232,306
Adjusted total annual revenue stream	110,289,696,918

The arbitrary 25% discount has been applied to take account of:

- The possibility of lower prices applying to past deliveries
- The total number of aircraft being delivered by the manufacturers not being as high in the past as it is now
- Ireland's supposed 70% market share being overstated
- The deliveries through Ireland potentially being tilted towards the cheaper models
- The possible existence of 'balloon' debt payments at the end of the leases that would reduce the monthly rentals
- A longer final maturity than 15 years, causing a reduction of monthly rentals as the debt's capital amount is paid off over a longer period, which might be the case for larger aircraft[12]
- The 6% interest rate being too high

On the other hand the rentals would be higher if:

- They contained a profit margin over and above the debt servicing costs
- There were fees and other costs for the LLP to bear, which can only be covered by the lease rentals
- The leases were not completely 'dry'
- The lease term was below 15 years
- The debt-to-equity ratio in the lease was higher than 85/15

In addition, where an aircraft is leased to an aircraft leasing concern in Ireland and then sub-leased to an airline, there are two lots of lease rentals to be added to Irish GDP, not one. The above figures only contain one, under the head lease, and where the rental is just what is needed to pay the LLP's debt service. The sub-lease rentals on the same aircraft will be much higher, but this factor only applies to a portion of the aircraft, and not to ones leased direct to an airline. Nevertheless, it could add yet another significant figure to Irish GDP.

[12] Larger aircraft, being normally used for long-haul flights, experience fewer take-offs and landings than models like the B737 and A320. It is these 'cycles' that cause the aircraft to age, rather than its hours in the air, and which determine the frequency of the major maintenance checks. A B777 might consequently only experience two 'cycles' in a 24-hour period, when a B737 might experience ten

Why aircraft lease rentals should not be counted as 'Sales' directly attributable to foreign-owned multinationals

Should the aircraft lease rentals be added to the 'Sales' of foreign-owned multinationals?

In an accounting sense they should not. The LLP sits at arm's-length from the foreign-owned multinational that is using the depreciation allowances generated by the LLP:

- The LLP's debts are under no circumstances repayable by the foreign-owned multinational
- The foreign-owned multinational exercises no ownership rights over the aircraft: the lessee has the right of 'quiet enjoyment' over it as long as it pays the lease rentals
- The foreign-owned multinational is not even second in line: that place is occupied by the lenders, who have a first mortgage security over the aircraft and are the nominated loss payee under the insurance policy for it

In consequence it would be wrong for the Profit and Loss Accounts of the foreign-owned multinationals to show either the lease rentals or the debt interest, or any other costs incurred by the LLP, just as their Balance Sheet should carry neither the aircraft itself nor the debt taken on by the LLP, and should only show the partner capital as an asset.

The Profit and Loss Accounts of the foreign-owned multinationals should show the depreciation of the aircraft only, along with royalties on intellectual property and depreciation of intellectual property, if such exists.

Even if the lease rentals were counted in, due account should be taken of the debt interest. The cashflow of the LLP is meant to be a 'wash': income should match outgoings, as there is no intention to build up the net worth within the LLP.

However, it is undeniable that the aircraft leasing market exists to this degree in Ireland to produce depreciation allowances for foreign-owned multinationals to reduce their huge operating profits in Ireland. The revenues and costs from this industry are indirectly attributable to foreign-owned multinationals.

The fairest method to adopt would be to show firstly a picture based on directly-attributable 'Sales' of foreign-owned multinationals, and then a picture including the indirectly-attributable ones.

So, we have first re-created what we believe to be the aggregate Profit and Loss Account of foreign-owned multinationals, constructed from the elements examined in this paper in the areas of costs and taxes, and relying on our own earlier research on their directly-attributable 'Sales'.

On top of that we have re-created versions of Ireland's GDP, GNI and MGNI, in which aircraft lease rentals feature.

Summary of outcome of examination of aircraft leasing

Aircraft leasing in Ireland produces:

- About US$86 billion per annum of depreciation allowances, or €82 billion, compared to the Irish authorities' figure of €87.64 billion for the depreciation of intellectual property and aircraft attributable to foreign-owned multinationals;
- About US$11 billion of corporation tax savings to foreign-owned multinationals, or €10.2 billion;

- Annual lease rentals of about US$110 billion flowing into Irish LLPs, or €104.5 billion, which should be counted as part of Irish GDP;
- Debt interest of US$72.6 billion per annum (€70.0 billion), two-thirds of the lease rentals, based on an assumptions that all the leases are of the same 15-year final maturity, that their average remaining life is half of their total life, and that each lease rental payment is therefore composed for 33% of capital repayment and 66% of interest.[13]

The lease rentals should already be included in GDP but this is open to doubt; it is conceivable that they have been and that the interest payments have been backed out again. If they have, only US$37.4 billion (€34.5 billion) has been added to GDP, rather than the full US$110 billion (€104.5 billion).

We should bear in mind three potential versions of Irish 2022 GDP:

- €502.8 billion - from Trading Economics/World Bank;
- €537.3 billion, with aircraft lease rentals added but interest payments offset;
- €607.3 billion, with aircraft lease rentals added and no interest payments offset.

It may already be clear that a figure of €502.8 billion for GDP is implausibly low if it includes €100+ billion of aircraft lease rentals, as well as the portion of the Irish economy not tied up with foreign multinationals of around €250 billion (i.e. the CSO's figure for MGNI). If there is a domestic economy of €250 billion and an aircraft leasing industry of €100 billion, the sales made by foreign multinationals out of their Irish subsidiaries would then have to be only €150 billion for the Trading Economics/World Bank figure for GDP of €502.8 billion to be correct.

[13] the lease rentals are calculated on an annuity model: the 'duration' of the underlying loan is about 2/3rds of its total life. At that point the lease payment would be composed of 50% interest and 50% capital repayment. The exact point of this crossover from 50%+ interest to 50%+ capital repayment is determined by the nominal interest rate: the higher the rate, the later comes the crossover point

9. What the 'Sales' directly attributable to foreign-owned multinationals are

Methodology

At this point we need to circle the 'Sales' directly attributable to foreign-owned multinationals and in their stock-in-trade. This will help validate – or undermine – the figure used in the table Version 1, in which a discretionary €100 billion was added to the CSO's figure of €253.9 billion for the size of the sector of the Irish economy tied up with foreign-owned multinationals.

Version 1 therefore showed 'Sales' of €353.9 billion.

To validate that figure we can use as a startpoint the study issued through Global Britain in 2019 'The Irish economic miracle – fact or fiction?'.

The methodology began with identifying the 300 largest companies in Ireland, from the Irish Times' list of 1,000. We discounted companies based in Northern Ireland, the indigenous Republic of Ireland companies and banks, and the foreign banking/insurance back-office activities.

We also eliminated all companies, even if foreign-owned and trading internationally from Ireland, as follows:

- Involved in agri-business;
- Undertaking building and construction;
- Owning mining facilities in Ireland, even if their overall trade was geographically wider;
- Professional services firms (KPMG, EY, PwC, Accenture, Deloittes).

We eliminated Glaxo Smith Kline at our discretion, as we felt it was implausible that this company was booking sales over a wide area through their Irish subsidiary, but of course there is the chance that they were.

We also applied a methodology based on EU sales only, even where it was obvious that the company was trading globally out of Ireland.

Trend Micro – at #303 and with Irish turnover of €210 million – missed the cut although it was known to be running a business model where EU sales were all booked out of Ireland. The elimination of companies at this level and smaller, taken with the other eliminations, ensured that the overall calculations remained plausible.

Sources of data

This resulted in 117 subsidiaries of foreign-owned companies, which we then allocated to four industry segments:

1. Information technology (54 companies);
2. Medical/biotechnology/pharma (39 companies);
3. Energy & Industrial (14 companies);
4. Communications (10 companies).

We obtained the global sales of each company, re-expressed these into € where they were not in that currency already, and multiplied them by 22% – the EU's share of global GDP. That was then the putative revenues diverted into Ireland from other EU Member States.

The global sales figures were taken preferably from the company's own press release or annual report, then, in order, to statistics websites, Forbes, The Irish Times Top 1000, and finally an estimate of the size of one division within a larger company (e.g. SAP Business Objects). This accounted for some of the figures being in round billions. We were more likely to have to use the fallbacks where the company was privately owned, or where it was a division of a major company that did not publish its own figures, or where it was controlled by a larger corporation (e.g. Yahoo by Verizon). In all cases we took the most recent full-year figure available, so they are not to a consistent date, albeit that most of them were from 2016.

Then we took the Cost/Income ratio of one of the largest companies in each industry segment as a token for the whole segment, and calculated the EU costs of each company. The Cost/Income ratio applied to the Communications sector appears high by comparison with the others. Where there were outliers, a large company was used whose figure appeared to be more representative.

As we did not know for sure what portion of the costs was incurred locally in other Member States as opposed to in Ireland, we used a consistent estimate of 70% of EU costs incurred locally, and 30% in Ireland. Companies running sales-only models might have next-to-no in-country costs. On the other hand, Ireland supposedly housed a major R&D centre in several companies in the Medical/biotechnology/pharma. Where that was the case, Ireland-incurred costs might be above 30% of the EU whole, but this contention has been put in doubt by the very low Research and Development credits quoted by Irish Tax and Customs as referred to earlier.

Results

The result was as follows:

Industry segment	Global sales	EU sales (22%)	Cost/income ratio	Total costs
Information technology	€948.3 bn	€208.6 bn	73%	€692.3 bn
Medical/biotechnology/pharma	€352.3 bn	€77.5 bn	78%	€274.8 bn
Energy & Industrial	€90.5 bn	€19.9 bn	59%	€53.4 bn
Communications	€118.0 bn	€26.0 bn	93%	€109.7 bn
	€1,509.1 bn	€332.0 bn		€1,130.2 bn

As for the distribution of the costs:

Industry segment	Total costs	EU costs (22%)	Incurred in-country (70%)	Incurred in Ireland (30%)
Information technology	€692.3 bn	€152.5 bn	€106.8 bn	€45.7 bn
Medical/biotechnology/pharma	€274.8 bn	€60.4 bn	€42.3 bn	€18.1 bn
Energy & Industrial	€53.4 bn	€11.7 bn	€8.2 bn	€3.5 bn
Communications	€109.7 bn	€24.1 bn	€16.9 bn	€7.2 bn
	€1,130.2 bn	€248.7 bn	€174.2 bn	€74.5 bn

The foreign-owned multinationals in Ireland made €208.6 billion of 'Sales' and incurred €74.5 billion of costs. This would have created a 2016 operating profit for the segment of €134.1 billion.

The weak points in the methodology appear to us to be as below.

Factors that might overstate the result:
1. EU sales being less than the relationship of EU GDP to Global GDP;
2. Not all of EU sales being booked out of Ireland;
3. Ireland carrying a greater percentage of EU costs than 30%;
4. Ireland carrying a portion of non-EU costs.

Factors that might understate the result:

1. Non-EU sales being booked out of Ireland as well;
2. Ireland carrying a lower percentage of total EU costs than 30%, if the business being engaged could be dematerialized.

Trajectory of Ireland's economy in the meantime

We should also consider the trajectory of Ireland's economy since then, and the indicators of the contribution of foreign-owned multinationals to that growth. We should also take into account the possibility that businesses already established in 2016 have increased their throughput since then, without needing to add to costs, because extra units of business can be put through their business model at extremely low marginal cost.

We should then attempt to adjust the figures for the period between 2016 and 2022, when Irish GDP has shown strong growth. We have inflated both revenues and costs by the same percentage, overlooking whether new, large companies have started up an Irish model, whether existing ones have expanded their scope beyond the EU, and so on. The results are:

Year	Irish GDP	Expansion	Sales	Costs	Result
2016	€299.1 bn	--	€208.6 bn	€74.5 bn	€134.1 bn
2022	€529.2 bn	76.93%	€369.1 bn	€131.8 bn	€237.3 bn

We can contrast this 2022 'Sales' figure of €369.1 billion with:

- €253.9 billion – the CSO's figure for the size of the sector of the Irish economy tied up with foreign-owned multinationals
- €353.9 billion – our Version 1 figure, which was the CSO's figure with a discretionary €100 billion added on so that a plausible figure for 'Genuine costs' appeared

This seems to us indicative that the CSO's figure is considerably understated.

We can proceed to building a Version 2 'strawman' with the 'Sales' and the costs from the 2019 study.

What the Profit and Loss Account for foreign-owned multinationals in Ireland looks like

We can amalgamate the figures from the 2019 study with what we know about:

- Deductions on account of royalty payments
- Aircraft depreciation

We can compare the resulting Version 2 with what is in the right-hand column in the table below - the Version 1 Profit and Loss Account for the segment calculated earlier, which satisfactorily solves the equation and uses all the figures that the Irish authorities have made available:

	Version 2	Version 1
Sales	€369.1 billion	€353.90 billion
Genuine costs	(€131.8 billion)	(€43.50 billion)
Operating profit	€237.3 billion	€310.40 billion
Royalties for usage of intellectual property	(€119.5 billion)	(€119.48 billion)
Depreciation of aircraft	(€87.6 billion)	(€87.64 billion)
Pre-tax profit	€30.2 billion	€103.28 billion
Corporation tax at 12.5%	€3.8 billion	€12.91 billion
Post-tax profit – available to be dividended	€26.4 billion	€90.37 billion

Key points:

- The 'Sales' come out to approximately the same figure in both: that seems to us to be highly suggestive of the plausibility of this level
- The royalties and depreciation are identical in both, but the profits (Operating, Pre-tax and Post-tax) come out as far smaller in Version 2
- This is attributable to the much higher 'Genuine costs' in Version 2 - there is a very large variance between the two versions on this point and so it merits questioning
- The higher figure, in Version 2, is based on a group-level cost/income ratio, an assumption that 22% of group costs are incurred in the EU, and an assumption that 30% of EU costs are incurred in Ireland

This methodology of cost distribution is fallible where (i) certain Ireland-based business models require next-to-no local presence in other EU countries and (ii) Ireland-based business models aim to channel a very high nominal amount of business through Ireland to which very little value is added, and which has an extremely low marginal cost i.e. the next unit of business put through the model requires almost no incremental cost.

The point (i) infers that the split between Ireland-incurred and locally-incurred costs could lie almost anywhere between 90%/10% and 30%/70%, but says little about the total amount of costs.

The point (ii) infers a very low cost/income ratio at the Irish operation, lower than the group cost/income ratio, and possibly a marginal cost for every extra unit of business near to zero.

We have no more data upon which to resolve the difference between the figures in the two versions but our opinion is that the figure for 'Genuine costs' in Version 1 lies nearer to the truth. Business models tend towards adding little value in Ireland: goods are neither manufactured nor finished/transhipped there, and services are invoiced through there while not necessarily being performed there (or at least for the price at which they are invoiced out).

Reconciliation difficulties against official figures

What still cannot be reconciled, though, is the Central Statistical Office's statement that the difference between GDP and GNI of €166.3 billion is the 'profits' booked in Ireland by foreign multinationals and remitted straight out again.

If these had been post-tax profits, then they would reflect pre-tax profits of €190.1 billion, and should have delivered €23.8 billion of corporation tax – 105% of Ireland's total receipts of corporation tax in 2022 of €22.6 billion. These 'profits' cannot be profits in this sense, but must also reflect the royalty payments out of Ireland that can be deducted as costs.

It is again not possible to fully reconcile the figures. If the royalties were €119.5 billion and the post-tax profits were €26.4 billion as in Version 2, we have 'profits' going out of €145.9 billion – a shortfall of €20.4 billion from the Central Statistical Office's figure of €166.3 billion for the difference between GDP and GNI.

If we use the figure for post-tax profits in Version 1 of €90.37 billion, plus the royalties of €119.5 billion, we have €209.87 billion, an excess of €43.57 billion over the Central Statistical Office's figure of €166.3 billion.

We have no more data upon which to resolve the differences, other than to say that the figure in Version 2 for corporation tax receipts from foreign multinationals undershoots the figure from Irish Tax and Customs, whilst the figure from Version 1 of €90.37 billion does not. The 'Genuine costs' in Version 2 are overstated, and for the reasons stated at the end of the previous section.

10. Recap of official versions of Irish GDP, GNI and MGNI – and how our work challenges them

The reader will recall that we have three potential versions of Irish GDP, for which the one from Trading Economics/World Bank is the anchor:

- €502.8 billion – the anchor;
- €537.3 billion, with aircraft lease rentals (€104.5 billion) added but interest payments offset (€70.0 billion);
- €607.3 billion, with aircraft lease rentals added and no interest payments offset.

We then also have GNI and MGNI from the Irish authorities:

	2020	2021	2022
GDP	€404.6 billion	€479.0 billion	€502.8 billion
GNI	€284.9 billion	€324.1 billion	€336.5 billion
MGNI	€204.9 billion	€233.3 billion	€248.9 billion

Set against these figures, we have our own estimate for the sales booked in Ireland of foreign multinationals of €353.1 billion and €369.1 billion, which we shall call €360.0 billion for ease of reference.

In our view we have a better explanation than the Irish authorities give for the 'Sales' of the foreign multinationals sector: the Irish authorities deduct back depreciation and supposed 'profits' conduited out of foreign multinationals in Ireland to their sister subsidiaries both as expenses (royalties) and dividends. These are deducted from their GDP figure which is itself questionable.

We have then have two models for what occurs below the figure of around €360 billion for 'Sales':

- Version 1, where companies already established in Ireland in 2016 have since then maximised the benefits of existing investments, putting through large incremental volumes at very low marginal cost (i.e. 'Genuine costs') and delivering profits and tax in line with what the Irish authorities disclose;
- Version 2, where the 'Genuine costs' have inflated in line with the sales, results in post-tax profits of only €26.4 billion.

The figure of €43.50 billion for 'Genuine costs' in Version 1 appears to us to be more plausible than the €131.8 billion derived from applying a group-wide cost/income ratio in Version 2. The Irish model is ideal for pumping additional volume through an existing, fixed cost base, especially where the underlying business is dematerialized.

Under both of our versions the depreciation figure of €87.6 billion is attributed entirely to aircraft, and not, as the Irish authorities do, to aircraft and intellectual property. Aircraft depreciation is tied up with the foreign multinationals business model, their being the only corporations with such huge taxable profits as to be able to use the annual depreciation allowances of such magnitude.

What is Irish GDP, and what is the size of the economy not connected with aircraft or foreign multinationals?

Let us revert first to GNI as the supposed size of the Irish economy not tied up with foreign multinationals. 2022 GNI was given by the Irish authorities as €336.5 billion.

However, we stated earlier that we regarded it as implausible that GDP could be €502.8 billion if there were €104.5 billion of aircraft lease rentals, and €253.9 billion of 'Sales' by foreign multinationals (this €253.9 billion being aggregate of the differences between GDP and GNI, and between GNI and MGNI). €104.5 billion of aircraft lease rentals is too much to be included in €253.9 billion of 'Sales' by foreign multinationals, and it is not, in an accounting sense, directly attributable to them. It is also too much to be included in economic activity in Ireland not connected with either aircraft or foreign multinationals: that would amount to only €144.4 billion if MGNI of €248.9 billion included €104.5 billion of aircraft lease rentals. It would all the more implausible given that the Irish authorities view aircraft leasing as part of the offshore economy.

It is a key point as to where the aircraft lease rentals fit in: if they are neither within MGNI figure nor within the €253.9 billion of 'Sales' attributable to foreign multinationals, where are they counted?

GDP of €502.8 billion is MGNI of €248.9 billion plus the €253.9 billion of 'Sales' attributable to foreign multinationals, according to the figures of the Irish authorities. However:

1. MGNI cannot include the aircraft lease rentals both on principle and because economic activity in Ireland not connected with aircraft or foreign multinationals cannot surely be as low as €144.4 billion; and
2. We have a plausible figure for the sales booked through Ireland by foreign multinationals of €360.0 billion, not €253.9 billion;
3. This €360.0 billion is 'Sales' directly attributable to foreign multinationals, and the aircraft lease rentals are only indirectly attributable to them, and should be accounted separately.

If we accept MGNI as having been the economic activity in Ireland not connected with aircraft or foreign multinationals, then, on a base of an MGNI of €248.9 billion, we have to add both the sales booked through Ireland by foreign multinationals of €360.0 billion, and the aircraft lease rentals of €104.5 billion as well to reach Ireland's 2022 GDP.

Element	Amount	Cumulative
MGNI	€248.9 billion	€248.9 billion
'Sales' directly attributable to foreign multinationals	€360.0 billion	€608.9 billion
Aircraft lease rentals	€104.5 billion	€713.4 billion

On that basis Irish GDP in 2022 would have been €713.4 billion, of which the portion attributable to 'offshore' would have been €464.5 billion, or 65%. GDP is €210.6 billion – or 42% - higher than the published figure of €502.8 billion. The increase is all in the 'offshore' portion, and it is 83% larger than the figure of €253.9 billion given out by the Irish authorities.

This speaks of an economy – and concomitant jobs and prosperity – joined at the hip with global tax avoidance, and of ingenuity and education being devoted to legerdemain rather than to adding to the sum of human endeavour.

11. Why are there multiple, irreconcilable versions of the truth?

It is helpful to the Irish government in its dealings with the EU and with the world at large to understate the size of the tax-avoidance economy, just as it is helpful to pursue secrecy practices on LLP accounts and beneficial ownership: with so little data on LLPs and privately-owned companies being in the public domain, the authorities are immune to any concrete sanity check on their utterances.

Understating the economy's size is helpful as it reduces EU budget contributions and exposure to risks through EU institutions. Making out that there is an even lower MGNI might be used to create an argument that Ireland's contributions and exposure to risk should be still lower.

At any rate MGNI serves as an initial trench to defend against pressure from the EU that Ireland's contributions and exposure to risk should be higher.

No wonder Brussels is now looking to get a bigger slice of Ireland's corporation tax revenues.[14]

On the other hand the understatement of GDP has its drawbacks: it dampens the false boosting that Ireland has enjoyed to its GDP and in consequence to its debt-to-GDP ratio. Ireland's compliance with the Eurozone Fiscal Stability Treaty, where the debt-to-GDP ratio should be below 60%, has been flattered by its attracting sales by foreign multinationals, but not by as much as it could have been.

Ireland could now be seen as a front-runner and consequentially eligible for greater payments in, and for fewer grants and subsidies.

This unwanted limelight might have been intensified had the public credit rating agencies – who look closely at the debt-to-GDP ratio – further upgraded Ireland's ratings. Ireland's long-term rating already stands at AA in Standard and Poor's system, which is good going when Ireland needed a financial bailout just thirteen years ago and has not yet repaid all of the bailout loans it took up.[15]

The ratio would be so much the better, and Ireland's public credit rating might go to AA+ or AAA, if GDP were found to be 42% higher – €210.6 billion higher at €713.4 billion than the published figure of €502.8 billion.

Figures of that magnitude might draw unwelcome attention to the size of the wheel being spun in Ireland and to the nature of the fuel driving the wheel around.

Future prospects

The Irish economy has a track record when it comes to rapid expansions and busts, but not such a good one when it comes to heeding indications that a bust may be on the way.

There have admittedly been concerns raised about the dependency on corporation tax per se, and on the source of that tax being concentrated onto a few very large companies.[16]

[14] https://www.irishtimes.com/politics/2023/09/15/ireland-to-resist-any-european-commission-plans-to-take-more-corporate-tax/ accessed on 12 October 2023
[15] https://economy-finance.ec.europa.eu/eu-financial-assistance/euro-area-countries/financial-assistance-ireland_en accessed on 14 October 2023
[16] https://www.reuters.com/markets/europe/soaring-corporate-tax-an-incredible-vulnerability-irish-economy-official-2022-07-04/ accessed on 14 October 2023

This also extended to the sub-concentration of the source onto the Information Technology sector, and the consequences for Ireland of a slowdown in that sector.[17]

More recently the Irish Times hinted that, with the introduction of a global minimum rate of corporation tax of 15%, the heyday of Ireland's benefits from courting foreign multinationals may be over.[18]

The correlation between Ireland's leading position in aircraft and its courting of foreign multinationals seems to have eluded the media, and therefore not figured in public debate. Perhaps this is because the original pattern for how to build up this business ended, in 1992, in a spectacular disaster.[19] Guinness Peat Aviation, operating from the Shannon Airport Tax-Free Zone, had built up its fleet in exactly the way described earlier, by leasing in hundreds of aircraft on 'finance leases' and leasing them out again under 'operating leases'. It built up a huge fleet, expanded globally, attempted a share listing and promptly collapsed. Now Ireland has three or four emulators of the Guinness Peat Aviation business model, as well as an airline set up by its founder – Tony Ryan – with the money he was able to make out of Guinness Peat Aviation before its collapse, and he gave the airline his own name: Ryanair.

Then we had the national bankruptcy of 2009/10.[20] The Irish economy had become heavily concentrated on real estate with a concomitant escalation in real estate prices. A bust followed this boom, and caused the bankruptcy of several lenders into real estate.[21] In order to raise the funds to bail out these failed banks, the Republic of Ireland itself required a financial bailout from the European Financial Stabilisation Mechanism, the European Financial Stability Facility, the International Monetary Fund and, bilaterally, from Sweden, Denmark and the United Kingdom.[22]

Since the bailout the Irish economy has become heavily concentrated in two areas: servicing foreign multinationals, and aircraft leasing, and actually they are one and the same.

The pattern is established: Guinness Peat Aviation in 1992, roll forward 18 years to the national bailout of 2010, and Ireland will be due for another financial catastrophe towards the end of the 2020s.

The next bust promises to be even more spectacular as it will combine the previous two: an activity on which most of its economy is concentrated – servicing foreign multinationals this time and real estate last time – and its current version of Guinness Peat Aviation on steroids – leasing 70% of the world's commercial airliner fleet.

These activities appear to comprise 65% of Ireland's economy, and most of its well-paid employment.

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[17] https://www.reuters.com/markets/europe/soaring-corporate-tax-an-incredible-vulnerability-irish-economy-official-2022-07-04/ accessed on 14 October 2023

[18] https://www.irishtimes.com/your-money/2023/09/07/is-irelands-corporation-tax-party-over/ accessed on 14 October 2023

[19] https://www.leasinglife.com/features/a-spectacular-take-off-and-a-crash-landing-the-story-of-gpa/ accessed on 15 October 2023

[20] https://www.imf.org/en/Countries/IRL/ireland-from-tiger-to-phoenix accessed on 15 October 2023

[21] https://ireland.representation.ec.europa.eu/news-and-events/news/circumstances-behind-irelands-bailout-late-naughties-2019-04-06_en accessed on 15 October 2023

[22] https://www.esm.europa.eu/assistance/ireland accessed on 15 October 2023

13. Summary and Conclusions

The explanations from the Irish authorities of the differences between GDP and GNI, and between GNI and MGNI, do not hold water. GDP itself is thrown into doubt when basic questions are asked about the extent of aircraft leasing and the associated lease rentals, and about the percentage of global sales that 117 Irish subsidiaries of foreign multinationals put across their books.

The economic activity booked in Ireland that is tied up with foreign multinationals is much larger than the €253.9 billion difference between GDP and MGNI as stated by the Irish authorities.

It is nearer to €464.5 billion - €360.0 of sales booked by foreign multinationals, and €104.5 billion of lease rentals on aircraft that are only leased through Ireland in order to produce depreciation allowances for the same foreign multinationals to offset against their corporation tax.

Who will pick up the pieces this time around when things go sour?

The European Stability Mechanism (successor of the European Financial Stability Facility), with its sparse resources?[23]

The Single Resolution Fund – the Eurozone's mechanism for bailing out failed banks? Its resources are limited and when they are burnt through its backstop is the European Stability Mechanism![24]

The United Kingdom has no need to be involved, having left the European Union: unlike in 2010 it could not be forced to make a bilateral loan as one of the solvent EU member states that were not in the Eurozone and who were therefore not guarantors behind the European Financial Stability Facility. Denmark and Sweden could be called upon again next time, as non-participants in the European Stability Mechanism but as still solvent and as EU member states.

However, the small print of the Good Friday Agreement, the Northern Ireland Protocol to the Brexit Withdrawal Agreement, and the more recent Windsor Framework will no doubt provide some sort of peg, however tenuous, for proponents of a certain view to advocate that UK money be contributed again. We can look forward to the familiar argument being trotted out that the fate of Ireland is a national interest of the whole UK, although it will be infinitely more difficult now than it was in 2010 to make that argument stick.

Which leaves us with one other constituency: the people of Northern Ireland, if the mood music being transmitted from Dublin, Brussels and the BBC had by then translated into a referendum on a United Ireland and a majority vote in favour.

Then the people of Northern Ireland would be called upon to share the pain without having partaken in the pleasure.

Even better, they will be paying for the Republic's bailout in euro.

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[23] https://en.irefeurope.org/publications/online-articles/article/the-european-stability-mechanism-hangs-by-a-thread-on-frances-credit-rating/ accessed on 16 October 2023

[24] https://en.irefeurope.org/publications/online-articles/article/new-task-bolted-on-to-european-stability-mechanism-with-how-much-extra-risk/ accessed on 27 October 2023