THE IRISH ECONOMIC MIRACLE – FACT OR FICTION?

How Brexit will expose Ireland’s phantom economy and boost the UK’s tax revenues in the process

by Bob Lyddon and Ewen Stewart

GLOBAL BRITAIN

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About the publisher…

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Global Britain Limited
Registered office: Lynton House, 7-12 Tavistock Square, London WC1H 9BQ
Registered in England No 03502745

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INTRODUCTION

Ireland's apparent economic success is extraordinary for a nation that has moved from being one of the least advanced economically in Western Europe to one of the very richest in the EU, surpassed only by Luxembourg. Irish per capita GDP stands at $78,800. This compares with the UK where per capita GDP is $43,000 and a Eurozone average of $41,000.

For per capita GDP in Ireland to be approximately 50% larger than the British, French and German equivalents is quite an extraordinary achievement, particularly given Ireland's relatively weak economic history over many centuries. Moreover, as recently as 2010, the Irish State required an emergency soft loan package of €85bn as the economy buckled under the strain of the credit crisis. Recovery has been swift and impressive, but how has it been achieved? This paper asks three key questions.

Firstly, we analyse the Irish economy and examine the key drivers of its phenomenal growth. What were the factors that have led to this extraordinary wealth? Is it sustainable and is it based on an open and transparent policy set?

Secondly, we examine in some detail the tax, regulatory and other mechanisms that Ireland has enacted to help grow its economy, which we argue are the overwhelming factors behind Ireland's newfound prosperity. We look at the four key pillars, which are much more complex and significant than simply having a 12.5% Corporation Tax rate, and give Ireland a 'flag of convenience' status – effectively re-directing tax generating revenues from other EU nations to the Irish Republic.

Thirdly, in the light of the heated debate over 'The Irish backstop' and the EU's desire to keep the UK in regulatory alignment with it, post Brexit, we examine if Ireland's 'flag of convenience' status is really in keeping with the EU's Single Market principles.

Our findings will surprise and even shock many economic and political commentators. We demonstrate the Irish Government, through the four pillars outlined, is to all intents and purposes using the 'flag of convenience' to undermine the tax bases of other EU nations, notably the UK, France and Germany. We argue that Ireland is effectively 'free-riding' on not just the UK but the EU as a whole. Those arguing for the UK to maintain complete regulatory alignment with the EU rather miss the point that Ireland is currently not itself operating on a level playing field.

Many commentators have examined Ireland's 'economic miracle' and we provide a brief and non-exhaustive list of some of those reports below. Nevertheless, we believe at this critical time in UK-EU relations a greater appreciation is required of the scale of Irish Government policy decisions that we believe distort European markets to the detriment of its neighbours. The sheer scale of Ireland's 'flag of convenience' policy will be its undoing sooner or later. Given Ireland's capital base, productivity and economic assets, the country is trading well above its natural equilibrium.

Once Brexit happens Ireland's phantom economy will become more exposed as the UK repatriates lost tax revenues in full view of remaining EU members. Increasingly aware of the economic distortions that are costing them billions, other EU nations will end Ireland's unfair arbitrage.

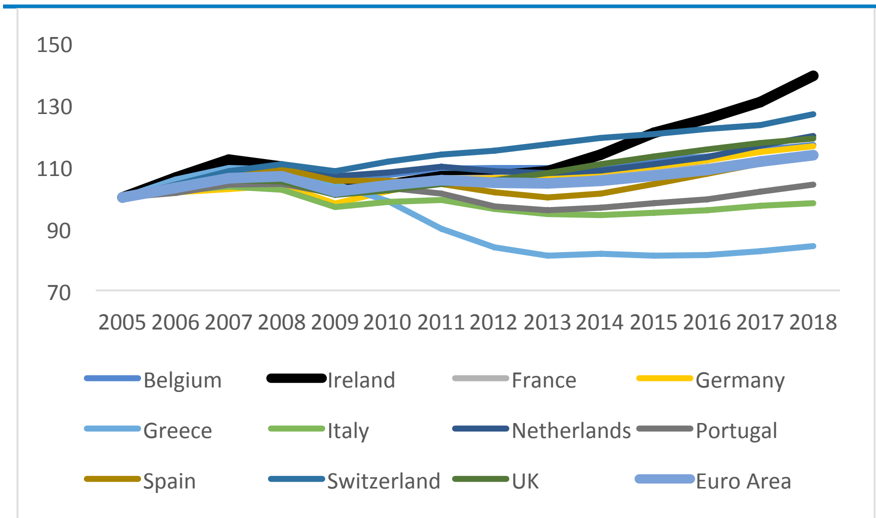
It might be in the EU's short-term interest to play up the backstop and turn a blind eye to Irish fiscal packages – but ultimately this anomaly will be closed by the EU and the pain felt by Ireland's people.

PART ONE - A PORTRAIT OF THE IRISH ECONOMY

Up and away – Ireland is a Celtic Tiger renewed

The chart below demonstrates how rapidly the Irish economy has grown. Between 2005 and 2018 Irish GDP has increased by 39%. This compares with just 13% for the Eurozone as a whole and 19% for the UK. Irish growth has thus been 2x the British average and 3x the EU one.

Major European nation GDP Index Growth 2005 =100



Source ECB

This economic growth is all the more extraordinary when one considers how hard a landing the Irish economy had during the financial crisis of 2008-10. The three charts below, which we use as a proxy for the Irish economy, show the unemployment rate, Government debt as a proportion of GDP and Irish house prices, highlight how troubled the Irish economy was. In many ways it was in an even weaker position then than Greece. Such was the dislocation Ireland required an emergency €85 bn soft loan package from EU bailout mechanisms, the IMF and three countries bilaterally. This package was needed to keep the economy afloat. The UK supported it with a €3.8 bn bilateral loan, and by being a joint-and-several guarantor of the €22.5 bn supplied through the European Financial Stabilisation Mechanism, even though it is not a Eurozone member.

Firstly, as is indicated by the chart below, unemployment peaked at 16% in 2012. Today it has fallen to 4.2% which is around half the EU average. Irish employment is now booming.

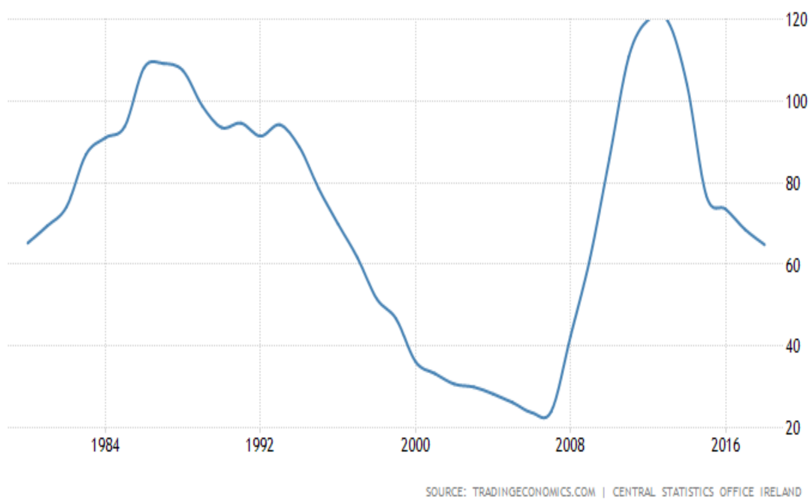
Irish Unemployment Rate % workforce

Source   Central Statistical Office Ireland

Secondly, the chart below outlines Government debt to GDP. Between 2007 and 2012 debt/GDP expanded sixfold from 20% to a peak of 122%, putting it very close to both Greek and Italian government degrees of indebtedness, and at a level generally considered as unsustainable by many economists.

Extraordinarily just eight years later Government debt to GDP has almost halved to 64.6%. As far as we can see such a rapid decline in Government indebtedness, relative to GDP, is without precedent in modern times and has not been matched by any other European nation. The contrast with Greece is stark.

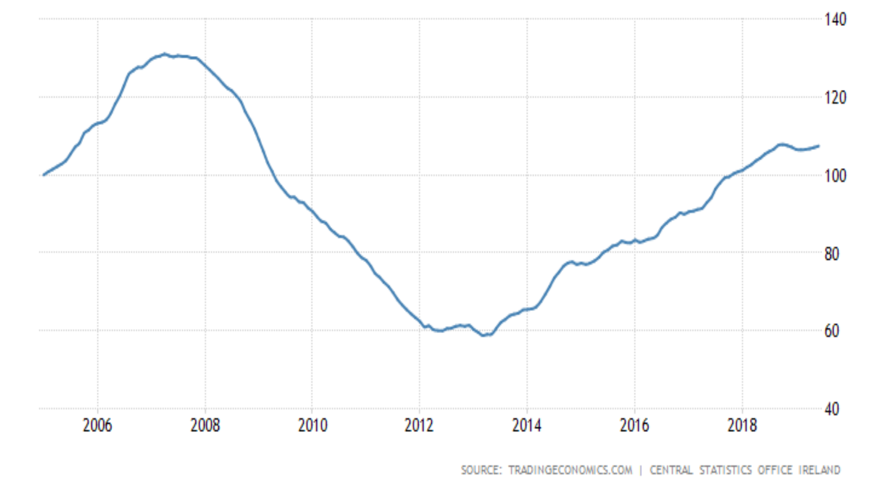
Irish National debt to GDP %



Source   Central Statistical Office, Ireland

Thirdly, as outlined below, Ireland saw a collapse in house prices. From the 2007 peak they halved bottoming out in 2013. Such a collapse inevitably put enormous strain on the banking system and consumer wealth. Since 2013 confidence has recovered and while house prices are not yet back to 2007 levels they have increased by around 80%, on average, from lows.

Irish House Price Index 2005=100



Source Central Statistical Office Ireland

The charts above demonstrate how this small country has come from relative decline and severe economic weakness to being perhaps, along with Luxembourg, the richest nation in the EU, and far wealthier, as measured by per capita GDP, than any major EU nation. The Irish economy had started its ascent before the financial crisis but its performance over the last six to eight years has been miraculous.

How has this been achieved? Was it a result of austerity, balancing the books and rebasing the economy for growth? Was it down to an extraordinary productivity growth or competitive advantage? Or perhaps Ireland has been a beneficiary of monetary policy? Or is it down to clever financial engineering creating a 'flag of convenience' and distorting other European markets?

What are the key drivers of the Irish Economy?

Historically the Irish economy was largely agrarian with some tourism and domestic services. Today's Ireland is somewhat different.

Ireland is an exporter *par excellence* trading over 120% of its GDP each year. Examining the chart below shows just what a phenomenal performance Ireland achieves in this regard. Its trade, relative to GDP, is second – amongst the group of key nations examined below - only to Hong Kong, a manufacturing Leviathan and global gateway if ever there was one. So effective are Irish exports, relative to GDP, that they are 4x more than the UK and France and 2.5x more than the Germans.

Selected Nation export value to GDP % 2018

Hong Kong	188.0
Ireland	120.5
Belgium	87.9
Netherlands	83.0
Switzerland	65.5
Poland	55.3
Austria	54.5
Sweden	47.0
Germany	47.0
Eurozone area	45.8
Norway	38.1
Spain	34.3
Canada	31.9
Italy	31.8
France	31.3
Russia	30.7
United Kingdom	29.9
Turkey	29.6
Australia	21.7
China	19.5
Japan	17.7
Brazil	14.8
United States	12.1

Source OECD

Even more impressively this growth in Irish exports is a fairly recent phenomenon as shown by the chart below, with trade effectively doubling since 2013. This compares with average EU exports up by just 20% over the same period. Moreover, Ireland is recording unprecedented trade surpluses. Last year's surplus was £89 bn or £18,540 for every man, woman and child in the Republic. To put that in context that is equivalent to 24% of GDP. This surplus, per capita, dwarfs any other EU nation.

Irish imports and exports and trade balance

Year	Total Exports Goods & Services	Total Imports Goods & Services	**Total Trade Balance**
2007	159	143	**16**
2008	158	142	**16**
2009	159	136	**23**
2010	173	145	**28**
2011	177	145	**32**
2012	183	152	**31**
2013	186	152	**34**
2014	214	179	**35**
2015	321	245	**76**
2016	328	286	**42**
2017	353	263	**89**

Source Irish Central Statistics Office

Examining the Irish trade in goods it becomes apparent that exports are dominated by two sectors: pharmaceuticals and organic chemicals. The Irish pharmaceutical sector, which booked exports of US$53.49 bn of goods in 2017 employs an estimated 25,000 people.

For the purposes of comparison the UK is home to two of the top ten global pharmaceutical companies, GlaxoSmithKline and AstraZeneca, employs an estimated 78,000 in the industry. Despite the UK's extensive research base, with the third highest R&D expenditure in the world, exports were just US$30 bn.

Irish Exports 2017 US$

Pharmaceutical products	$53.49B
Organic chemicals	$33.13B
Optical, photo, technical, medical apparatus	$15.68B
Machinery, nuclear reactors, boilers	$9.28B
Essential oils, perfumes, cosmetics, toiletries	$9.12B
Electrical, electronic equipment	$8.80B
Aircraft, spacecraft	$5.84B
Miscellaneous chemical products	$4.26B
Meat and edible meat offal	$3.68B
Dairy products, eggs, honey, edible products	$3.05B
Cereal, flour, starch, milk preparations and products	$2.47B
Plastics	$1.71B
Beverages, spirits and vinegar	$1.70B
Mineral fuels, oils, distillation products	$1.42B
Commodities not specified according to kind	$1.28B
Meat, fish and seafood preparations	$1.05B

Source Irish Treasury

Examining the largest 20 Irish companies by revenue booked in Ireland is also illuminating. The largest company - Apple - booked revenues that equated to one third of Irish GDP, while only 5 of the top 20 companies in Ireland ranked by revenue are actually home-grown Irish companies. Corporate Ireland is dominated by the US as is demonstrated below.

Top 20 Irish companies by Revenue booked in Ireland (€bn) 2017

	Company	Operational Base	Revenue 2017 €bn
1	Apple Ireland	United States	119.2
2	CRH	Irish	27.6
3	Medtronic	United States	26.6
4	Google	United States	26.3
5	Microsoft	United States	18.5
6	Eaton	United States	16.5
7	DCC	Irish	13.9
8	Allergan	United States	12.9
9	Facebook	United States	12.6
10	Shire	UK	12.4
11	Ingersoll-Rand	United States	11.5
12	Dell Ireland	United States	10.3
13	Oracle	United States	8.8
14	Smurfit Kappa	Irish	8.6
15	Ardagh Glass	Irish	7.6
16	Pfizer	United States	7.5
17	Ryanair	Irish	6.6
18	Kerry Group	Irish	6.4
19	Merck & Co	United States	6.1
20	Sandisk	United States	5.6

Source Irish Treasury

But is it real?

The Nobel Laureate, Paul Krugman, described the Irish economic performance as 'leprechaun economics' and called their success as 'a neo-Lafferism,' a reference to Arthur Laffer's idea that a tax take could increase as the rate of tax was reduced.

The Irish State too recognises that all is not quite as it appears and in 2017 issued a second statistical series indicating that the 'real economy' was broadly a third smaller than the GDP data had indicated.

The Irish Statistics Office now also publish 'modified gross national income' (GNI) data in an attempt to examine actual domestic activity stripping out the global flows that are reported in Ireland.

This second measure is one that many economists consider to be a much more representative analysis of the underlying health of the Irish economy. This excludes the global activities of largely multinational companies where activity is deemed to be global, not emanating in reality from Ireland and not purely domestic.

On a GNI measure, in 2017 GDP was not €294 bn but more realistically €181 bn. The reported trade surplus of €89 bn was actually in deficit. Moreover, Government debt/GDP had not fallen by anything as much as the official data suggests. Rather than 68% GDP it remains at 106% of GNI. In other words, the apparent decrease in the Government debt ratio has been achieved by an expansion of GDP, not by a reduction of debt, and the expansion of GDP was attributable to global flows, not domestic ones.

Looking at trade with the UK specifically the House of Commons Library briefing paper of 26th July 2019 reported £38.3 bn of UK exports to the Irish republic and £21.9 bn of imports in 2018 recording a positive surplus of £16.4 bn. In contrast the Irish Statistics Office book an Irish surplus of €10.3 bn. At current exchange rates that is a discrepancy of over £30 bn.

Moreover, while even on a GNI basis Ireland remains one of the wealthiest economies on a per capita basis, in the EU there is a strong suspicion that the 'flag of convenience' status has grown the economy significantly, as the benefits of the pillars that we discuss in the next section of this paper have led Ireland to attract foreign investment which would not have occurred under a level playing field.

It is beyond the scope of this paper to speculate exactly how much of even the domestic growth is sustainable under a more level tax playing field but we suspect that, should Ireland ever be forced by the EU to 'normalise its affairs' in line with the practices of other EU nations, the impact would be severe.

As we do not believe this policy will be tolerated in the long term we issue a warning that even under GNI accounting the Irish economy is trading well beyond its natural productive level. The risks to its long term stability are significant

PART 2 – THE CONJURING TRICK – HOW IRELAND HAS ACHIEVED THIS 'MIRACLE'

Ireland as a 'flag of convenience' country for international business

Ireland has been determinedly building out the attributes of a 'flag of convenience' country within the EU, acting as a bridge between the EU and countries outside it. To enable this free flow of monies, Ireland continues to build out its network of Double Taxation Treaties whereby flows can come in and out of Ireland without deductions for withholding tax.

The second pillar is the low mainstream corporation tax rate of 12.5%, well below the EU average.

The third pillar is financial engineering, notably around aircraft financing and around exploiting the EU Freedom of Establishment whereby EU headquarters companies are set up in Ireland as a sales base for the entire EU: EU revenues are concentrated into Ireland, whilst any subsidiaries in other Member States show their costs equating to their income, no local profit being reported and no corporation being tax payable.

The fourth pillar is the accommodating attitude of the Irish revenue authorities, whether it be in the area of generous capital allowances (for example on aircraft), or in allowing – as tax-deductible expenses in Ireland – charges levied by related parts of the same multinational, whether on account of royalties for usage of brands, patents or recipes, or management fees, or loan interest. Unlike most countries where the revenue authorities seek to disallow intercompany charges where they appear inflated, in Ireland there is ready cooperation to ensure that, while the rate of corporation tax applied is 12.5%, the pre-tax profit to which this rate is applied is sharply reduced such that the effective rate is nearer 3%.

These intercompany charges are normally payable to sister companies of the Irish company that are located in the countries with which Ireland has signed a Double Taxation Treaty.

Ireland's network of Double Taxation Treaties

Ireland has Double Tax Treaties ("DTT") with 74 countries, of which 73 are in effect[1]. These are needed both with EU countries and with non-EU ones.

Ireland has a DTT with every one of the other 27 EU Member States, which includes the several 'flag of convenience' countries of Cyprus, Estonia, Latvia, Lithuania and Malta, and the ones known for one of more of their own network of DTTs, corporate secrecy, easy-to-use corporate structures and trusts: Luxembourg and the Netherlands.

The non-EU countries with which Ireland has a DTT in effect are:

1. Albania
2. Armenia
3. Australia
4. Bahrain
5. Belarus
6. Bosnia & Herzegovina

[1] https://www.revenue.ie/en/tax-professionals/tax-agreements/double-taxation-treaties/index.aspx
[2] https://www.revenue.ie/en/tax-professionals/tax-agreements/double-taxation-treaties/u/uk.pdf

7. Botswana
8. Canada
9. Chile
10. China (People’s Republic of)
11. Egypt
12. Ethiopia
13. Georgia
14. Hong Kong
15. Iceland
16. India
17. Israel
18. Japan
19. Kazakhstan
20. Korea (Republic of)
21. Kuwait
22. Macedonia
23. Malaysia
24. Mexico
25. Moldova
26. Montenegro
27. Morocco
28. New Zealand
29. Norway
30. Pakistan
31. Panama
32. Qatar
33. Russia
34. Saudi Arabia
35. Serbia
36. Singapore
37. South Africa
38. Switzerland
39. Thailand
40. Turkey
41. Ukraine
42. United Arab Emirates
43. United States of America
44. Uzbekistan
45. Vietnam
46. Zambia

Of the above, only Panama is widely-recognised as a tax haven. However, several others are known “conduit” countries – Qatar, Singapore, Switzerland, and United Arab Emirates.

The treaties with the Netherlands and Luxembourg, within the EU, are particularly important, as these countries have a wide network of DTTs themselves, and financial flows can be further dog-legged through those jurisdictions in order to reach an endpoint on beneficial terms, if the direct routing is sub-optimal. This practice is known as “treaty shopping”.

It would be very unfortunate if the DTT between Ireland and the UK[2] were considered as encompassing legal persons in Jersey, Guernsey or the Isle of Man, or any of the British possessions and protectorates in "sunny places with shady people". Neither the 1995 protocol[3] nor the 1998 protocol[4] add to the relevant definition.

As it is Ireland's network of DTTs is all that is needed for Irish companies to accept the "sister company charges" from legal persons established in these jurisdictions, and diminish the Irish taxable profit. Where those charges ultimately land for tax purposes will remain unclear, as there could be several intermediary companies and jurisdictions before the flow reaches the point where a taxable profit is declared, no doubt in a jurisdiction which levies corporation tax, but where the current rate is 0%.

The country of incorporation of the company to which these sister company charges are directed will have no reason or incentive to challenge that the charges are too high: if the country does levy corporation tax, it is to their advantage that the charges be inflated. If the country levies no corporation tax or applies a rate of 0%, they are immune to the level of the charges.

Note on financial statements of Irish-registered companies

Ireland runs a secrecy regime regarding the accounts and tax payments of foreign-owned subsidiaries in Ireland. Although financial statements must be submitted by Irish-incorporated limited liability companies[5], these are not publicly available from the CRO (www.cro.ie), even for a fee, as those of companies incorporated in England and Wales are through Companies House.

In consequence we have to infer what the financials of Irish-incorporated companies are when they are not listed or incorporated as public limited companies: foreign-owned companies are not listed and they are rarely incorporate as a "plc".

In addition, foreign multinationals are making use of unlimited liability companies, which do not have to file accounts with the Criminal Records Office.

Effective Tax Rate

The effective tax rate (or "ETR") experienced by Irish subsidiaries of multinationals has been the subject of considerable studies by academics and tax specialists.

A range of studies has put the effective tax rate for foreign corporates at between 2.2% to 4.5%:

i. In February 1994, James R. Hines Jr., published the most cited academic paper on tax havens entitled: "Fiscal Paradise: Foreign Tax Havens and American Business"[6]; which estimated in Appendix IV that Ireland's *aggregate* effective corporate rate (ETR) was 4%;
ii. In October 2013, Bloomberg commissioned a *Special Investigation*[7] into the tax affairs of U.S. multinationals in Ireland, which estimated that the effective tax rate of all U.S. multinationals in Ireland had fallen to 3% by 2010;

[2] https://www.revenue.ie/en/tax-professionals/tax-agreements/double-taxation-treaties/u/uk.pdf
[3] https://www.revenue.ie/en/tax-professionals/tax-agreements/double-taxation-treaties/u/uk-protocol-1995.pdf
[4] https://www.revenue.ie/en/tax-professionals/tax-agreements/double-taxation-treaties/u/uk-protocol-1998.pdf
[5] https://www.cro.ie/Annual-Return/Accounts-Requirements
[6] https://ideas.repec.org/p/fth/priwdp/56.html

iii. In February 2014, Trinity College Dublin Professor of Finance, Dr. Jim Stewart, author of studies into Ireland's tax system[8], used U.S. Bureau of Economic Analysis data filed by U.S. multinationals, to estimate that the effective tax rate of U.S. multinationals in Ireland for 2011 was 2.2% to 3.8%;
iv. In November 2014, the *Tax Justice Network*, in their *Ireland Country Report*[9] from the 2013 Financial Secrecy Index, said the Irish State's claims that the effective tax rate was 12.5% were "misleading", and that Ireland's corporate ETR was between 2.5% to 4.5%, depending on the various assumptions used;
v. In November 2017, Irish economist David McWilliams writing in *The Irish Times*[10] quoted that the U.S. BEA statistics implied U.S. multinationals in Ireland paid an effective tax rate of 3.27% on Irish registered pre-tax income of $106,789 million in 2013, and 3.38% on Irish registered pre-tax income of $108,971 million in 2014, due to "a myriad of loopholes to avoid even our own low rates of tax";
vi. In June 2018, 24 years after the 1994 James R. Hines paper into global tax havens, French tax economist Gabriel Zucman, with the NBER, in his study into the BEPS flows of global tax havens titled: *The Missing Profits of Nations*[11] also estimated in Appendix I of the study that Ireland's *aggregate* effective corporate tax rate was 4%.

ETR is only a realistic way of defining tax paid if it is clear what the profit is on which the tax is payable. This is opaque in Ireland both since financial statements are not published, and because the method used to reduce tax is not to have a Corporation Tax Rate that is low, but rather to enable the Irish company to load itself up with tax-deductible costs to the extent that the profit is almost expunged.

Base Erosion and Profit Shifting

The term BEPs (Base Erosion and Profit Shifting) covers a range of techniques including accepting intercompany charges from sister companies in different jurisdictions, as well as allowing depreciation of tangible assets (like aircraft, through lease structures) and of intangible assets (like intellectual property).

The available BEPS tools through Ireland defy the traditional method of defining profits in the first place. The traditional method identifies "Cost of Goods Sold" first, normally meaning the direct cost of supplying the number of units that are sold in the Revenues line.

Secondly there are indirect costs, or overheads, which cannot be directly attributed to any one unit of supply; often these costs are blended with other income, which is not attributable to selling a unit, such as interest income. Other costs normally exceed Other income by a large margin.

Revenues less 'cost of goods sold' produces the 'gross profit' or 'operating profit'.

The 'gross profit' or 'operating profit' less 'other income/costs' produces the 'pre-tax profit'.

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[7] https://www.bloomberg.com/graphics/infographics/u-s-profits-in-ireland-pile-up.html
[8] https://www.tcd.ie/business/assets/pdf/MNE-tax-strategies-and-ireland.pdf
[9] https://www.financialsecrecyindex.com/Archive2013/Country%20Reports/Ireland.pdf
[10] https://www.irishtimes.com/opinion/david-mcwilliams-a-new-economic-plan-for-ireland-1.3294430
[11] https://www.wsj.com/articles/corporations-push-profits-into-tax-havens-as-countries-struggle-in-pursuit-study-says-1528634659

In Ireland we have an extra, major category of costs that are the ones manufactured through the BEPS techniques in order to reduce the Pre-tax Profit down to a level where 12.5% of it is "between 2.2% to 4.5%" of the "normal" Pre-tax Profit.

In our calculations we have used an arbitrary 3% ETR as a working average of these academic and expert studies, even though the available evidence from the largest known example – Apple – is that their ETR between 2014 and 2017 was 1.3%.

Example BEPS tools available in Ireland

The simplest tool is an absence of the "thin capitalisation" rule. This rule limits the intercompany debt that a company can take on from a related entity, and still enjoy tax-deductibility of the debt interest. An Irish subsidiary can be 100% debt-funded with minimal capital, and all the debt interest will still be deductible against tax.

Secondly, with no "thin capitalisation" rule, there is then no test that the interest rate on the intercompany loan is on arm's-length terms: the same terms that the same borrower would pay to a bank for that amount of finance, for that tenor, and with the same security. The lender is free to charge whatever interest rate they like, meaning the money is paid away pre-tax which would otherwise have flowed down through to the Pre-tax profit and be subjected to tax prior to distribution as a dividend.

The third area is the 25% Research and Development tax credit referred to on the website of the Irish Development Agency[12].

The fourth area is the ability to depreciate an investment in intellectual property (such as a software programme, a recipe, or a design). The exact depreciation schedule is not part of the Irish tax code but is agreed when the multinational submits a scheme for approval to the Irish authorities. An Irish entity acquires the intellectual property asset from a sister company (usually one in a low-tax jurisdiction), and the Irish company gains a tax credit for up to 50% of the acquisition cost, which it can use to shield profits it would otherwise have made.

The key question is: who sets the acquisition cost? This cost will be paid to a sister company, and, valuing intellectual property being what it is (elastic), the cost will be very full, and generate a disproportionately large tax credit in Ireland.

Illustration of Profit & Loss account and tax liability

Here is an example of an Irish subsidiary of an international corporation and its Profit & Loss account, without and then with these artificial costs caused either by intercompany billings from sister companies in other tax-favoured jurisdictions, or by inflated intercompany interest, or by obtaining tax credits on the back of R&D and acquiring intellectual property, or else by the company participating in aircraft leasing and generating substantial tax credits.

We take an industry where the Cost/Income ratio is 70% in its normal course of business.

[12] https://www.idaireland.com/invest-in-ireland/ireland-corporate-tax

P&L item	Without deductions	With deductions
Sales	100.00	100.00
Operating costs	-70.00	-70.00
Preliminary profit	30.00	30.00
Artificial costs	-0.00	-22.80
Pre-tax profit	30.00	7.20
Irish tax at 12.5%	-3.75	-0.90
Retained profit	26.25	6.30
Effective tax rate on Preliminary profit	12.5%	3.0%

The -22.80 of "artificial costs" can be regarded as a distribution of the company's operating profit, but through means that are tax-deductible and are paid before the calculation of the taxable profit.

Most revenue authorities challenge such items, for example where interest on an intercompany loan is limited by the Thin Capitalisation test to make sure that a subsidiary's revenues pass through the corporation tax calculation before being upstreamed to the owners as post-tax dividends.

In Ireland, however, the revenue authorities act in concert with international companies, their professional services of advisers and other authorities (principally the Irish Development Agency or IDA – see below) in order to ensure that Ireland attracts the business with all its spin-offs in terms of jobs: after all, 12.5% of something is better than 100% of nothing.

Acting as the lessor within an aircraft lease is an opportunity for Irish subsidiaries of international companies to reduce their Irish tax bills, by generating tax credits in relation to the depreciation of the aircraft. We have treated these two industries separately, but given that 70% of all commercial aircraft are financed in Ireland via tax leases, it is perfectly possible that international companies are reducing their Irish tax bills by this method, as well as the others.

Shannon and Dublin Docks as fore-runners of today's Irish business model

'Flag of convenience' status was initially enabled only in specific localities in Ireland.

The first was the Shannon Airport Zone, home to a predecessor enterprise of Ryanair called Guinness Peat Aviation, founded by Tony Ryan. GPA rose to be the largest operating aircraft lease company in the world, until its fall in the mid-1990s. A 0% corporation tax rate prevailed for companies based in the Shannon Airport Zone.

The regeneration of Dublin docks began with the establishment of the Dublin Docks International Financial Services Centre ("DIFSC"), also with an initial corporation tax rate of 0%, later raised to 10%. Only certain activities attracted this low rate of taxation. Companies were not precluded from undertaking other activities, but profits on those activities would attract the mainstream rate of corporation tax.

Favoured activities within the DIFSC included:

- Insurance broking: major companies could not put their insurance business direct into the Lloyds market, but by dog-legging it through their own controlled broking subsidiary they could do;

- A corporate treasury company to borrow and lend money amongst subsidiaries of the same parent company.

This was all offshore business, conducted on behalf of non-residents of Ireland. A licence was required by each company set up in the DIFSC in order to commence business and enjoy the preferential tax rate. These licences were not available directly to applicants, but from Master Licence Holders such as Allied Irish Banks and Bank of Ireland. These institutions, which occupied major buildings in the quite limited available space within the DIFSC, had what became known as "coathanger licences", and companies wanting a DIFSC licence had to hang their licence on the coathanger of the major players, and also use their services:

- The DIFSC company had to have a minimum of 1½ full-time equivalent employees;
- It had to be physically located within the DIFSC;
- This created the business model whereby the DIFSC company was administratively run by the holder of the coathanger licence, who charged the costs of the 1½ FTEs as a minimum – and more depending upon the workload;
- The owner of the DIFSC company did not directly employ any staff within the DIFSC company…
- …and if some companies only required ½ FTE to run them but the coathanger licence holder was being paid for 1½ FTEs, who is going to complain when the profits are tax-free?
- To meet residency rules, the DIFSC company had to have a majority of Irish resident directors, so the board had 3 directors: two rented by the hour from the coathanger licence holder and one from the real owner…supported by the customary administrative sham to obscure that it was the director from the real owner making all the decisions.

The business model then starts to emerge under which financial flows are passing through this offshore compartment of the Irish economy that are out of all proportion to the size of the onshore Irish economy.

In addition, servicing the offshore economy requires company formation agents, lawyers, tax advisers, auditors, directors-for-rent and so on, creating an industry of highly-paid, high-value jobs.

Corporation tax rate and the financial crisis

When the financial crisis struck Ireland, it had not escaped the notice of the main bailout parties that Ireland was causing business to be dog-legged through Shannon and the DIFSC for no other purpose than tax.

The main bailout negotiators for Germany and France made it a condition that Ireland agree to abolish the special tax status of the DIFSC and Shannon, and to have just one corporation tax rate. This was agreed and the mainstream rate of 12.5% is ubiquitous.

The story since then has been of how Ireland has leveraged this rate, plus its network of Double Tax Treaties, and the national freedoms in EU law around allowances and detailed tax treatments, in order to attract the EU headquarters of non-EU businesses, and to attract EU-wide revenues into Ireland while leaving the costs in other Member States.

This is the essence of what is known as BEPS and Ireland is its major exponent.

The rest of this paper concerns the techniques and impacts of profit-shifting, whilst mentioning Ireland's attraction of back-office processing from the insurance and banking industries, and its major position in commercial aircraft.

BEPS' aim is to dog-leg huge financial flows through Ireland and, out of a small percentage skim, for Ireland to enjoy jobs at all levels of salary, but particularly to feed the disproportionately-sized professional services industry.

Irish Development Agency ("IDA")[13]

The IDA is the state-sponsored agency responsible for driving Foreign Direct Investment into Ireland, including, for selling the 'flag of convenience' package to companies all round the world. As an example, regular roadshows are organised to Silicon Valley as the technology industry has been one of the main ones to utilise the flag.

The IDA claims that 210,000 people work directly in IDA-sponsored companies in Ireland, and that for every 10 jobs created by Foreign Direct Investment, another 8 are created in the wider economy. So that is 378,000 jobs being supported by the 'flag of convenience' industry.

The IDA website has an impressive list of case studies for clients that have established a presence in Ireland,[14] and we will be exploring the business models that are used.

They centre on the contention that the business' added value is primarily achieved through what is done in Ireland, and not by what is done in other EU Member States.

On that basis the sales revenues and profits can be focussed on Ireland, while the costs are incurred within other Member States, for activities such as fulfilment. The normal pattern of employment is that the highly-paid jobs are in Ireland, while the low-paid ones are in other Member States. In-country workforces are typically composed of contract workers, zero-hours workers and similar patterns of employment that generate little or no payroll or social taxes for the exchequers of the respective Member State, despite that exchequer having to support the infrastructure upon which the business depends.

We calculated in 2016[15] that the UK was losing out on up to £10 billion a year in taxes and £10 billion in wealth extracted and spent elsewhere in the EU, thanks to this perfectly legal abuse of the EU Freedom of Establishment. This study focuses exclusively on Ireland, and the figures contained in this paper point to the loss of corporation tax to Ireland being somewhat short of that figure, but only because profit margins for the companies' real businesses have been squeezed in the meanwhile.

On the other hand the amount spent in Ireland instead of in the UK and other Member States comes out as much higher.

The revenue levels of the in-country operations are controlled by the Irish EU headquarters company, and are usually paid as a commission for the fulfilment of basic tasks. Miraculously the in-country

[13] https://www.idaireland.com/
[14] https://www.idaireland.com/how-we-help/case-studies
[15] Brexit Paper Nr4

revenue equates exactly to the in-country costs, meaning that the business models of these multinationals enable them to pay next-to-no Corporation Tax in the UK or other "victim" Member States.

Profit-shifting model compared with normal model

We can compare the IDA's business models with one where revenues and costs were incurred in the same place, rather than being split.

Normal model:

P&L item	Amount
Sales	100.00
Operating costs	-70.00
Pre-tax profit	30.00
Local tax at 25%	-7.50
Retained profit	22.50

Profit-shifting model:

P&L item	Local operations	Irish operation
Sales	50.00	100.00
Own operating costs	-50.00	-20.00
Commissions paid to local operations	N/A	-50.00
Real pre-tax profit	0.00	30.00
Sister company costs	N/A	-22.80
Revised pre-tax profit	0.00	7.20
Local tax at 25%	0.00	N/A
Irish tax at 12.5%	N/A	0.90
Retained profit	0.00	6.30

The sales made by local operations are all services rendered to the Irish company; local operations make no sales to end-users themselves.

Ireland benefits in terms of 0.90 of corporation tax and in terms of the 20 that are spent in Ireland as the cost of the Irish headquarters operation: that is 29% of all costs in the EU, totally disproportionate to the Irish share of EU GDP, which is about 1.4%.

The benefit to Ireland is clear, but no overall value is created to the world economy by what is going on: no-one in Belgium is more or less likely to buy a Cisco router because Cisco sell it to them from their Irish EU headquarters than from a Belgian subsidiary.

Ireland has simply invented a series of tax-sparing business models that divert economic activity so it is dog-legged through Ireland, yielding a small amount of tax revenue to Ireland at the expense of other Member States, and diverting operational costs from being spent in other Member States, where it would yield taxes to pay for local infrastructure and public services.

Example of Apple Inc as a profit-shifting model

The case of Apple did result in some disclosure of the Irish subsidiary's financials, which we can reconstruct from Apple Inc's annual report and the reporting in the press on the Irish subsidiary: https://www.irishtimes.com/business/technology/apple-records-global-sales-of-119bn-in-ireland-1.3283066

US$1.5 bn[16] of Irish corporation tax was paid over a 3-year period to 2016, or US$500 mil per annum when the annual sales of Apple's Irish subsidiary were US$138 bn per annum.

This equates to an effective tax rate of 0.362% of revenues.

Apple claimed it paid Irish tax at a rate of 12.5% on its Irish profits, inferring that the Irish profits were US$4 bn per annum, or 2.898% of revenues. This is a tiny profit margin.

Apple Inc's full-year figures for 2016 in the 10-K format[17] showed in the Consolidated Statement of Financial Operations on page 39 a picture as follows:

Line item	US$ bn
Revenues	215
Cost of Goods Sold	131
Gross Profit	84
Other business income and costs	23
Total legitimate costs	154
Pre-tax profit	61
Tax	16
Retained profit	45
Gross Profit/Revenues	39%
Pre-tax profit/Revenues	28%
Cost/Income Ratio	72%
Tax/Revenues	7%
Retained profit/Revenues	21%
Tax/Pre-tax profit	26%

With the information we have on the Irish subsidiary, we can project what its financials from normal operations would look like, absent the tax-reducing adjustments, and then which tax-reducing adjustments are needed to reduce its taxable profit to the level at which US$500,000 is the correct Irish tax to be paid at a rate of 12.5%:

[16] All numbers in this section of the paper are in Euro, and we have used an exchange rate of US$1.20 = EUR1 throughout.
[17] https://s2.q4cdn.com/470004039/files/doc_financials/2016/annual/10-K_2016_9.24.2016_-_as_filed.pdf

#	Line item	Calculation	US$ bn
A	Revenues	Published	138
B	Cost of Goods Sold	A x 61%	84
C	Operating Profit	A - B	54
D	Other business income and costs	A x 11%	15
E	Total legitimate costs	B + D	99
F	Ordinary pre-tax profit	C - D	39
G	Extra "sister company costs"	F - H	35
H	Pre-tax profit for Irish tax purposes	H x 8	4
I	Tax	Published – H x 12.5%	0.5
J	Retained profit	H - J	3.5
	Operating Profit/Revenues	C / A	39%
	Ordinary pre-tax profit/Revenues	H / A	28%
	Tax/Revenues	I / A	0.36%
	Tax/ Ordinary pre-tax profit	I / F	1.3%
	Retained profit/Revenues	J / A	2.5%
	Tax/Pre-tax profit for Irish tax purposes	I / H	12.5%

Qualification and quantification

Having established how the model works financially at the back end in a theoretical example, and in a specific case study, now we qualify how the front end of the business model works.

The front end demonstrates how it is that revenue is being diverted, quite legally, through Ireland which would otherwise fall into the GDP of other EU Member States.

Having done that we aim to quantify how much the revenue is that is dog-legged through Ireland, and the impact for Ireland and for other EU Member States.

We are going to look at three types of structure:

1. Multinational corporates;
2. Banking and insurance back-office processing;
3. Aircraft financing.

The IDA plays a role in the first two but not in the last one. 70% of the world's commercial aircraft fleet is nominally owned by companies in Ireland, although for sure most do not fly there regularly and probably were not there at the time the financing was closed. The aircraft financing industry has its roots, as mentioned above, in Guinness Peat Aviation out of the Shannon Airport Zone.

Multinational corporates

We will start with multinational corporates and for this purpose we can safely assume that the relationship of the company's EU sales to its global sales is not less than the relationship between the size of the EU economy and the size of the global economy. EU GDP at US$18.7 trillion in 2018 was 22% of global GDP of US$85.8 trillion (Source: World Bank[18]).

[18] https://data.worldbank.org/indicator/ny.gdp.mktp.cd

The money is flowing through Ireland because multinationals are, perfectly legally, exploiting the EU Freedom of Establishment to trade in the Single Market, and doing so out of companies incorporated in EU Member States with favourable tax regimes.[19]

Three 'business models' are fairly common for how multinationals arrange this:

1. Direct sales of products over the internet from the Republic of Ireland;
2. An in-country salesforce acting "on behalf of" its sister company – the European centre of a major internet company, in the Republic of Ireland – to sell advertising space, data, customer behaviour analysis etc., all of which is delivered through the centre in Ireland;
3. An in-country company using the brand of its sister company – such as the European centre of a major internet company in Ireland – to generate sales, the fulfilment of which is organised by the Irish company.

In each case the business relationships between the related companies are in the main for usage of intellectual property: that part of the business generates no movement of goods. Nor does the performance necessarily qualify as a "service". This is the type of category that can fall below the horizon of, for example, the Office of National Statistics' Trade and Balance of Payments figures.

There are other models that have more substance to them; for example a Starbucks-style business model involves cafes and coffee, an Apple-style business model involves shops and physical IT equipment. Nevertheless both of these also involve extensive usage of brands and licences, as well as large volumes of sales between one group company and another, such that many of the principles used to good effect in the substance-lite business models of software and advertising can also be applied to the substance-heavier business models of catering and IT hardware/devices.

We will have to make assumptions both about the Cost/Income ratios of the businesses involved, and on the portion of these costs that are incurred in-country and the portion incurred in Ireland.

Many of these multinational businesses run on a very high gross profit margin: their Cost/Income ratio measured at the level of "Cost of Goods Sold" could be as low as 30%. In other words, every incremental €1 of EU sales only requires €30cts of direct cost to be expended to fulfil it (i.e. to create the goods, to deliver them, to download a copy of the software…).

Then there is the legitimate overhead not directly tied to the sale of one unit, causing the Cost/Income ratio to escalate, but still leaving a substantial margin that would normally be subject to tax, were financial engineering techniques not employed.

[19] Footnote on source of business model examples: These examples are derived from Bob Lyddon's exposure to the banking requirements of international corporations making a Foreign Direct Investment into Ireland over a 25 year period, and from Bob's experience in aircraft finance with Manufacturers Hanover Trust, principally the financing of a fleet of Airbus aircraft into the USA under single- and double-dip tax leases for Guinness Peat Aviation. The banking requirements of international corporations were expressed in Requests for Proposal for their Accounts, Payments, Collections, Balance Management and Electronic Banking, visible to Bob in his roles at Chemical Bank, BankBoston and IBOS, and during consultancy engagements at PwC

Three business models

Here we have simplified versions of the three 'business models' that are fairly common:

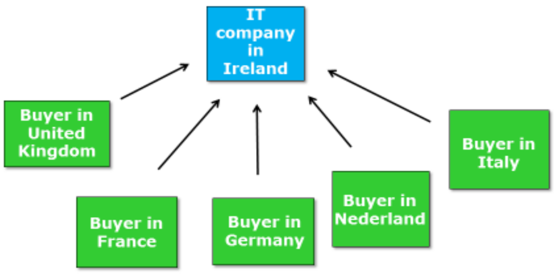
1. Direct sales of products over the internet: based on downloads of a software programme, such as Symantec's Norton Anti-Virus;
2. A UK salesforce acting "on behalf of" its sister company to sell advertising space, data, customer behaviour analysis etc, all of which is delivered through the centre in Ireland: based on the business model for boosting Facebook posts where the vendor is Facebook Ireland;
3. A UK company using the brand of its sister company in Ireland to generate sales, the fulfilment of which is organised by the Ireland company: based on eBay, which actually uses Luxembourg.

Model 1A: Direct sales of products over the internet

The software is advertised and sold on the internet. The owner of the source code vests a master licence for it in a company in the Republic of Ireland, which sells user licences to consumers throughout the EU from there.

All invoices would be headed "SoftwareCo Ireland" and have Irish VAT added in the case of a buyer who could not quote a VAT registration number of a different EU Member State.

Sales proceeds flow directly into accounts held by SoftwareCo Ireland, probably at an American bank, in its branches or established through a mirror account structure at the bank's partner institutions (which is convenient for short-circuiting local Anti-Money Laundering procedures). The buyers are making their payments directly to SoftwareCo Ireland, wherever its accounts are held, and even if there are no cross-border payments into Ireland:

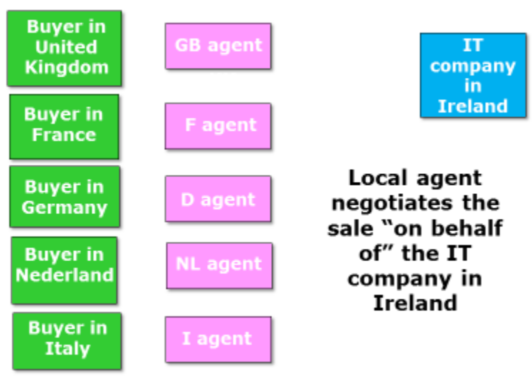


SoftwareCo Ireland would add up all its sales and costs, attributing some of the revenues to R&D carried out in Ireland to generate Irish tax credits, and paying sister companies in tax havens for the usage of various resources, before finally calculating its profits, and paying 12.5% of them to the Irish revenue authorities.

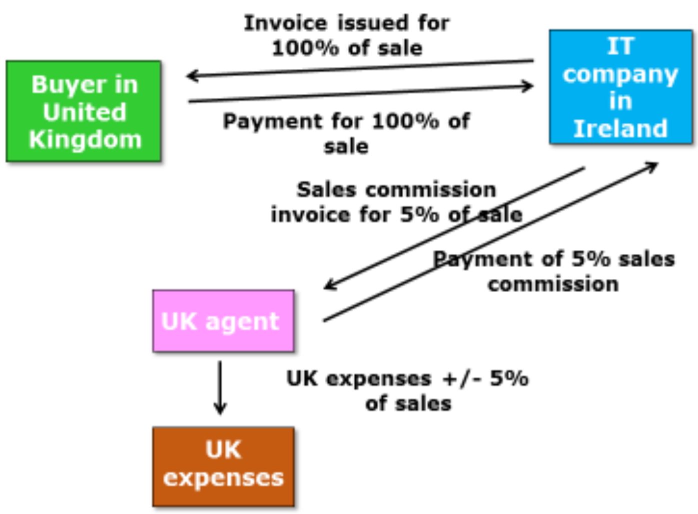
All the "added value" is being done in Ireland; there are no other legal entities in other EU Member States. SoftwareCo is operating 100% legally in the context of the set-up of the EU.

Model 1B: "Commissionaire Sales Model" within the same company as Model 1

Where the service requires a face-to-face sale or a software implementation locally, the common structure is the so-called "Commissionaire Sales Model". In this case the SoftwareCo has a subsidiary in each Member State that acts to sell, install and support its suite of products for business users:



When a sale is made by the agent to a local buyer, the invoice for the sale is issued by the Irish company as the principal, the owner of the product.



The buyer pays the invoice with a payment into a bank account opened by the Irish company, either in its own name or by the local agent acting "on its behalf".

Economics of Model 1b - the "Commissionaire Sales Model"

Here the agent is working on commission, a sales commission just like a person selling door-to-door under the Avon Cosmetics model.

If the commission is 5% of the face value of the invoice, 95% of the value remains as gross profit on the books of Ireland, to be taxed after deduction of any other expenses Ireland has.

5% is the sales income of the UK agent, and this pattern is replicated across all the other EU Member States.

If 5% is the sales income of the agent, the expenses of the agent (office, salaries, cars, phones…) miraculously turn out to be 4.99%. This leaves only 0.01% of the aggregate value of invoices as taxable profit in the other EU Member States, where the corporation tax rates can be expected to range from 20-30%.

Model 2: A local salesforce acting "on behalf of" its sister company to sell advertising space etc.

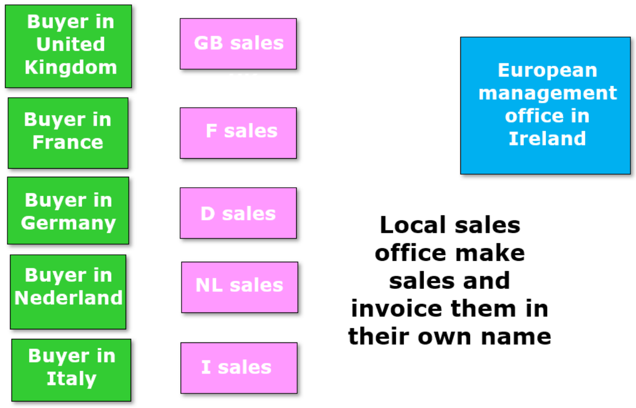
This model is again the "Commissionaire Sales Model", but where the service always requires a face-to-face sale, and it usually goes hand-in-hand with much larger offices in-country to make sales to a bigger audience. The local "agent" is selling services like banner advertising on behalf of a search engine company based in Ireland, and so the place of delivery of the service sold is Ireland. Ireland pays a sales commission to the UK which is a percentage of the value of the sale.

This structure depends upon the contention that it is the service that contains most of the value, not the selling of it. Based on that contention, the sales commission can be kept low, such that the vast majority of the value of the sale comes to rest in the Irish company. If, on top of that, the capability being sold can be proven to have had R&D expended upon it in Ireland, the tax on that element of profit is below the 12½% mainstream rate.

Model 3: a local company using the brand of its sister company in Ireland to generate sales, the fulfilment of which is organised by the Ireland company

In this example the local sales offices is selling advertising space on a website using branding materials, upon which the European headquarters company owns the licence. The local company is also collecting sales proceeds for sales made on the site, and paying Ireland for the fulfilment of the sales (invoicing, tracking, warehousing, despatch, delivery of goods, accounting, reporting, cash management etc).

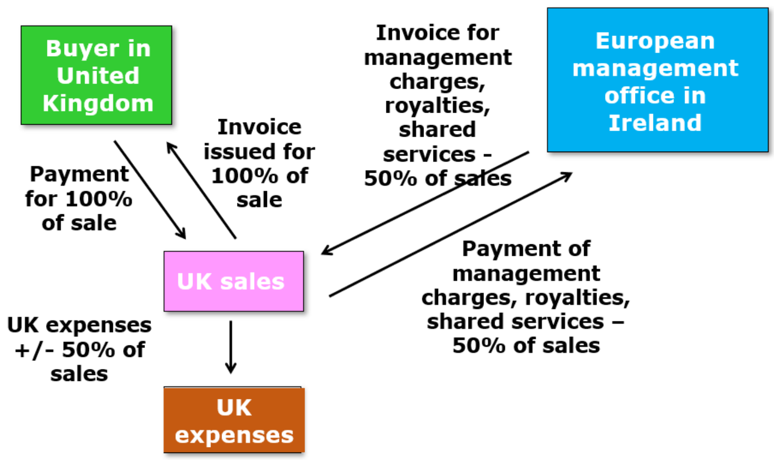
The critical difference between this model and Numbers 1 and 2 is that, in this one, the local buyer is directly invoiced by the local subsidiary, and then the local subsidiary is subject to several lines of charge-back by the European headquarters company:



The European headquarters company construes the usage of the branding materials as meriting a standing royalty payment from each sales subsidiary. It also construes the right conferred on the sales subsidiary to sell advertising space on the European's site as meriting a royalty payment, such that each sales invoice sent to a customer by a sales subsidiary triggers a royalty invoice payable by the same sales subsidiary to Ireland.

In addition to the royalty payments, the European Management entity will send further invoices for:

- Fulfilment of sales
- Management services
- Provision of shared services such as R&D, advertising and marketing



All these invoices will be tax-deductible in the P&L accounts of the local companies, and taxable in Ireland's (that is, if there were a payment of any substance due).

The UK activities of this company are assumed to have a greater physical element so its Cost-to-Income ratio is 50% rather than 30%. Since it is itself invoicing its customers, that would leave 50% of sales proceeds as its profit, if nothing else were done.

In order to extract this 50%, the European headquarters generates streams of invoices on the UK company, for royalties and for services rendered. It is still in principle obliged to determine the pricing in its invoices to its sister companies on an "arm's-length" basis, fairly reflecting the prices at which the sister companies could have contracted the same services from unrelated companies.

Royalties as against services rendered

But here the royalty element demonstrates its value. Royalty payments are notoriously nebulous, because it can be very difficult to identify a precise equivalent to the product or service to which the royalty pertains: for example, Nestle have a global royalty stream from their manufacturing subsidiaries for the usage of the recipe for the condiment mix called Maggi which, thankfully, has no common equivalent.

The tendency in this model is to pad out the royalty payment element, and reduce the payment-for-services element, but still have the two add up to 50% of sales.

Quantification methodology for multinational companies

What we were trying to drive out here is:

1. The revenues diverted into Ireland from other EU Member States;
2. The profits earned in Ireland and the Irish corporation tax paid;
3. The corporation tax not paid in other Member States, using an average 25% rate.

The methodology began with identifying the 300 largest companies in Ireland[20], from the *Irish Times*' list of 1,000. We discounted companies based in Northern Ireland, the indigenous Republic of Ireland companies and banks, and then allocated foreign banking/insurance back-office to the subsequent section.

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 is geographically wider;
- Professional services firms (KPMG, EY, PwC, Accenture, Deloittes) even though their business is highly dependent upon these business models.

We eliminated Glaxo Smith Kline at 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 are.

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

Trend Micro – at #303 and with Irish turnover of €210 million – missed the cut although it is known to be running Model 1. The elimination of companies at this level and smaller, taken with the other eliminations, ensures that the overall calculations remain plausible.

[20] https://www.top1000.ie/companies

This resulted in 117 subsidiaries of foreign-owned companies, which we have 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).

Given the list of 300 included public sector companies, it is credible to posit that this "offshore" multinational business accounts for 40% of the Irish private sector economy – nearly half of Ireland's top 300 companies.

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

The global sales figures were taken preferentially 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 accounts for some of the figures being in round billions. We were more likely to have to use the fallbacks where the company is privately owned, or where it is a division of a major company that does not publish its own figures, or where it is 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.

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. DCC and Avaya looked like outliers, as did CMC in the preceding section, so Gartner's ratio has been used as the token. On the other hand Communications has the fewest companies in it, so that should not greatly affect the overall numbers.

As we do not know for sure what portion of the costs was incurred locally in other Member States as opposed to in Ireland, we have used a consistent estimate of 70% of EU costs incurred locally, and 30% in Ireland where an Irish business model is in place. Companies running Model 1 with no in-country presence at all might have 100% of costs in Ireland, and where Ireland houses a major R&D centre - as several companies in the Medical/biotechnology/pharma do – Ireland-incurred costs will be above 30% of the EU whole.

It should be mentioned, in addition, that where the Cost/Income ratio is high, all the greater are the amount of costs that are spent in Ireland and the number of jobs attracted.

For each company we made seven calculations:

1. The corporation tax if all the revenue and costs had been booked in-country, leaving the original operating profit to be taxed locally at 25%: this is corporation tax not paid in other Member States thanks to profit-shifting into Ireland;
2. The costs moved to Ireland in order to operate the Irish business model;
3. The real taxable profit of the Irish company, booking 100% of EU sales but incurring 30% of real EU costs;

4. The real Irish corporation tax at 12.5%;
5. The incremental "sister company charges", billed in from other companies in Ireland or elsewhere, that cause the original real profit to be reduced down so that the taxable profit, charged at 12.5%, yields a tax charge of only 3% of this original real. This reduction factor is a constant: 76% of the original operating profit;
6. This drives out the profits earned in Ireland for tax purposes;
7. The Irish tax actually payable, at 12.5% on the reduced figure.

By sector this came out as follows, in € millions per annum:

Industry Sector	Normal tax	Costs moved to Ireland	Real Irish taxable profit	Real Irish tax	Extra charges	Revised Irish taxable profit	Revised Irish tax
Information technology	13,924	45,883	55,693	6,962	43,327	13,366	1,671
Medical/ biotechnology/ pharma	4,303	18,091	17,212	2,151	13,081	4,131	516
Energy & Industrial	1,967	3,613	7,869	984	5,980	1,889	236
Communications	382	7,329	1,527	191	1,161	366	46
Totals	14,305	53,212	57,220	7,153	43,487	13,733	1,717

Let us express these totals in another way, without the "millions":

Category	Annual amount
Annual corporation tax revenues denied to other EU Member States	€14,305,000,000
Annual costs transferred into Ireland and spent there on jobs, real estate…	€53,212,000,000
Taxable profit that should be declared by these companies in Ireland	€57,220,000,000
Tax that should be payable in Ireland even at its low corporation tax rate	€7,153,000,000
Artificial costs conjured up in order to reduce taxable profit	€43,487,000,000
Actual taxable profit agreed by Irish revenue authorities	€13,733,000,000
Actual tax levied by Ireland	€1,717,000,000

The basic deal is simple: we estimate Ireland gets €53.2 billion spent in Ireland by international corporations that would otherwise be spent elsewhere in the EU. In exchange the Irish revenue authorities agree to a notional give-up of €5.4 billion of Irish corporation tax (€7.1 billion less €1.7 billion). This give-up is achieved through these same companies acting as lessors in tax-leveraged aircraft leases, as well as through the allowing by the Irish revenue authorities of spurious intercompany charges billed in by sister companies either inside Ireland or based in other known tax havens, with which Ireland has a Double Taxation Treaty,

The losers are the other EU Member States – allowing €53.2 billion to be spent in Ireland that has nothing to do with the domestic Irish economy and losing €14 billion of corporation tax –given this it is hard to see why they support the Irish government in the Brexit negotiations in the name of solidarity.

Solidarity should be reciprocal but Ireland's economic model is nothing less than parasitic on the rest of the EU economy. In fairness Ireland is not the only Member State playing this game. Luxembourg and the Netherlands are major proponents of "offshore" techniques, and then you have Cyprus, Malta and the Baltics implementing features of the 'flag of convenience' – but Ireland is the leader in the servicing of international companies.

Ireland also services international banking and insurance, as does Luxembourg on the grand scale, with the others being niche players in eMoney and Fintech.

Ireland is also unrivalled in the area of aircraft finance, as we shall see.

Foreign banking and insurance industries

Under this heading we looked at the attraction by the IDA of large-scale back-office processing centres of banks and insurance companies into Ireland, which might otherwise have been located in the same place as their respective front-office for the same business, whether that be New York, London, Frankfurt or indeed several locations.

The costs of the back-office operation will be billed back to the respective front-office operation via an intercompany invoice. These intercompany invoices are exports that add to Irish GDP.

The benefits for Ireland are not tax revenues or indeed banking fees (which might be earned from the multinational company models above), or fees and interest margins earned by Irish banks from aircraft financing, as described below), but simply jobs, resultant salary and payroll taxes, utilisation of real estate, and the 8 spin-off jobs that the IDA claims are created for each 10 jobs directly in Foreign Direct Investment.

It seems reasonable that the all-in cost per job is €50,000 on average for the direct jobs, and €40,000 on average for the indirect ones.

Company	City	Jobs	Weblink
Northern Trust	Dublin, Limerick	1,200	https://www.siliconrepublic.com/people/northern-trust-catherine-duffy
Citibank	Dublin	9,293	http://www.top1000.ie/citibank
State Street	Dublin, Drogheda, Kilkenny, Naas	2,500	http://www.top1000.ie/state-street-international?keywords=state%20street
BoNY Mellon	Dublin, Cork, Wexford	1,200	https://www.bnymellon.com/ie/en/index.jsp[21]
Fidelity Investments	Galway	995	http://www.top1000.ie/fidelity-investments-ireland
PayPal	Dundalk	2,443	http://www.top1000.ie/paypal
Zurich Insurance	Wexford	2,576	http://www.top1000.ie/zurich-insurance

[21] "BNY Mellon currently maintains offices in Dublin and Cork and employ over 1200 people in Ireland, providing a comprehensive range of services in asset ..."

Zurich Life Insurance	Wexford	572	http://www.top1000.ie/industries/financial-services-insurance
Metlife Europe	Dublin	1,245	http://www.top1000.ie/industries/financial-services-insurance
Total direct jobs		22,024	
Value @€50,000 average p.a.		€1.10 bn	
Spin-off jobs on IDA formula of 8-to-10		17,619	
Value @€40,000 average p.a.		€705 mil	
Total jobs		39,643	
Total value		€1.81 bn	

Aircraft financing

Ireland is the global hub of the aircraft financing industry. Reportedly 70% of the world's commercial airliner fleet is nominally owned by companies registered in Ireland. These will be on tax-leveraged leases whereby the airline that ordered the aircraft sells the aircraft on, upon delivery, into a lease structure, in which it acts as the lessee itself.

To quantify this we can base ourselves on the annual sales of the two largest aircraft manufacturers:

- Boeing's annual revenues to 30/6/19 were US$92.2 billion[22] or EUR76.8 billion.
- Airbus' annual revenues to 31.12.18 were EUR64 billion[23].

We can with confidence use 70% of these figures as the values of aircraft acquired by legal entities in Ireland per annum, because we take no account of other manufacturers like Embraer and Bombardier, and because these are the values delivered after deduction of purchase discounts. The airline negotiates these discounts direct with the manufacturer when the order is placed. When the aircraft is delivered, the airline sells the order on to the lessor of the aircraft but at Fair Market Value i.e. at list price: the airline either makes an immediate profit or arranges for the profit to be applied within the lease, reducing the lease rentals.

The value of aircraft acquired by Irish entities per annum can be estimated as (€76.8 bn + €64 bn) x 70% = €98.5 bn per annum.

Banking and professional services revenues

Given how the transactions are subjected to substantial financial engineering, it is not unrealistic to moot that Irish professional services firms and banks charge 3% of the aircraft's value in upfront fees, which is €2.96 bn per annum.

In addition, given the typical manner in which an aircraft is financed, 85% of the money will be borrowed. The terms of a loan into an aircraft lease follow a rule-of-thumb:

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[22] https://www.macrotrends.net/stocks/charts/BA/boeing/revenue
[23] https://www.airbus.com/newsroom/press-releases/en/2019/02/airbus-reports-strong-fullyear-2018-results-delivers-on-guidance.html

Borrower	A Special Purpose Company ("SPC") established in Ireland solely for the purposes of acquiring this one aircraft
SPC Owner	An Irish corporation that would otherwise have a corporation tax liability of 12.5% of its Irish profits
Equity	The SPC Owner injects 15% of the Fair Market Value of the aircraft into the SPC as equity
Debt	85% of the Fair Market Value of the aircraft, lent by Irish banks into the SPC without recourse to the SPC Owner
Loan currency	EUR
Loan term	15 years
Loan repayment	In 30 equal semi-annual instalments commencing 6 months from the aircraft's delivery
Residual loan balance	Zero
Loan duration	7.8 years
Upfront loan fees	1% flat of loan amount
Interest rate basis	A margin over the London Interbank Offered Rate in EUR, set on the loan balance at the start of each six-month period, and payable at the end of that period along with the repayment instalment
Interest margin	2% per annum
Security	First mortgage on the aircraft
Lease of the aircraft	The aircraft will be committed on a lease to the airline that originally ordered it, for at least 15 years
Purchase option	The airline will have a purchase option on the aircraft at the point when the loan has been completely paid back in year 15, for the amount of the SPC Equity plus €1,000
Rental after the purchase option	The monthly rental escalates if the purchase option is not exercised by the airline, so that allowing the option to expire unexercised is worse for the airline than buying the aircraft at a price that is only 15% of its FMV when new
Relationship of Purchase Option Price to aircraft FMV	Historical FMVs on the types of aircraft involved will generally support a 15% residual value for it after 15 years, and possibly more. This will be a further incentive for the airline to exercise the purchase option. Were the aircraft to be a less marketable type, or have special features, or even special engines, then the initial equity might have to be higher, and/or the loan paid back quicker

We can then calculate the loan interest margin that is accruing every year out of the aircraft financing business, based on the total loans outstanding at any one time.

A	Annual value of new aircraft	As above	€98.5 bn
B	Loan financing @85%	A x 85%	€83.7 bn
C	Average loan duration	As above	7.8 years
D	Loan stock	B x C	€652.9 bn
E	Interest margin	As above	2%
F	Irish bank interest margin	D x E	€13.0 bn

Thus we can see that the Irish financial and legal/tax industries are earning just under €16 bn per annum from the aircraft financing industry: €13 bn in loan interest and just under €3 bn in financial engineering fees.

Pillars on which the aircraft financing industry rests

The earnings are based on three factors:

- The experience in aircraft leasing earned over a 40 year period thanks initially to Guinness Peat Aviation in Shannon;

- The network of Double Taxation Treaties established by Ireland with other countries enabling inward and outward cashflows to be made without either deductions on account of withholding tax or the administrative complications of obtaining credit for withholding tax paid in one jurisdiction and applying it in another;
- The Irish regime for allowing the SPC Owner to depreciate the entire value of the aircraft against Irish tax even if they only paid in 15% of its value.

It is this last point that bears closer scrutiny. The SPC will usually be a Limited Liability Partnership. This enables the General Partner (who is for all other intents and purposes the owner) to use the tax loss which arises in the SPC due to the depreciation of the aircraft, and apply it against their own corporation tax liability, without making themselves liable for the SPC's debts.

Financial benefits for the SPC Owner

The cashflow of the SPC consists entirely of the lease rental payments from the aircraft, and these need only be sufficient to meet the interest costs and the loan repayments. The eventual return of the SPC's equity to its owner is met through the purchase option. Normally the rules around leasing specify that the owner must get their equity paid back to them plus a small surplus: the main financial benefit to the owner is the relief from their corporation tax liability in the early years.

The tax allowances regime in Ireland[24] is that the asset can be depreciated over 8 years "straight line", at 12.5% of its initial value per annum. Annually, this shelters corporation tax of Initial Asset Value x 12.5% x 12.5%, or 1.5625% of the Initial Asset Value. If the SPC Owner only has to inject 15% of the Initial Asset Value but can still claim the tax allowance on the entire Initial Asset Value, the benefit of 1.5625% rises to 10.4167% when applied to the amount they actually injected.

A schedule of 12.5% p.a./straight line ranks as quite aggressive, especially for an asset that may have a useful life of 20 years, and which, according to historical norms, will still be worth over 15% of its original price after 15 years. So, if this is applied to an aircraft whose Fair Market Value was €50 million, the SPC Owner's profile of money out and in is as follows:

Month	Reason	Amount Out	Amount In
0	Payment of equity amount – 15%	€7,500,000	0
12	Reduction of corporation tax bill	0	€781,250
24	Reduction of corporation tax bill	0	€781,250
36	Reduction of corporation tax bill	0	€781,250
48	Reduction of corporation tax bill	0	€781,250
60	Reduction of corporation tax bill	0	€781,250
72	Reduction of corporation tax bill	0	€781,250
84	Reduction of corporation tax bill	0	€781,250
96	Reduction of corporation tax bill	0	€781,250
108	--	0	0
120	--	0	0
132	--	0	0
144	--	0	0
156	--	0	0
168	--	0	0
180	Proceeds of exercising purchase option	0	€7,501,000

[24] https://www.revenue.ie/en/companies-and-charities/corporation-tax-for-companies/corporation-tax/capital-allowances-and-deductions.aspx

This represents an annual rate of return of 6.79572% for the equity investor – which may still appear too high to the airline, but which is limited by the assumed requirement for the investment to pay out at the end more than was paid in at the beginning. It would be unusual for the lease terms to require that the equity owner subsidise the airline's rental out of its tax savings, not least because the tax savings are predicated on the lessor remaining in profit.

The key point is that the SPC requires no revenue at all out of the airline during the 15 years of the lease, until the airline exercises the purchase option.

The value of this give-up of lease rental can be quantified, assuming that the cost of borrowing the 15% equity slice for 15 years is 3% (based on a LIBOR rate of 1% and an interest margin of 2%).

Instead of €7,500,000 being needed to be invested in Month 0 in order to produce €7,501,000 in Month 180, only €4,814,606 is required at a compound interest rate of 3%. The difference - €2,686,394 on an aircraft that cost €50,000,000 – can be regarded as a further purchase discount of 5.37%, in addition to whatever purchase discount the airline obtained from the manufacturer.

There are complex financial engineering structures under which a lease like this can be "defeased" in order to crystallise this implied extra purchase discount as actual cash: this used to be very common where the lease was put in place in Japan.

At any rate the availability of the generous depreciation schedule of the Irish revenue authorities, coupled with the large reservoir of Irish-registered companies with substantial profits to shelter, ensures a ready supply of lessors.

We calculated the need of foreign-owned Irish companies for artificial costs in order to reduce their taxable profits: €43 billion of such costs are needed in order to shelter that portion of the real €57 billion per annum profits that is required to bring the effective tax rate down to 3%. The aircraft finance industry can deliver an amount pushing-on for half of what Ireland requires to achieve this.

The aircraft need have no connection to Ireland nor need ever go there: with Swedish tax leveraged leases, the aircraft had at least to be on the ground in Sweden at the point at which the Swedish leasing papers were signed. This was supposed to avoid flagrant abuse, whereas it was really a fig-leaf.

Similarly the Japanese revenue authorities used to insist that the equity investor receive back at the end a sum that exceeded their investment, which is then the amount of the purchase option. Again this was meant to avoid flagrant abuse. We only have it on assumption that the Irish revenue authorities insist that the purchase option be for an amount that exceeds the SPC Owner's initial investment, whereas they may allow a lower amount and still grant the lessor the full tax benefits.

Equally, behind the scenes, the Irish revenue authorities may be allowing an accelerated depreciation schedule, faster even than the already-aggressive mainstream one, as they publicly announce they do on alternative fuel vehicles.

There are, in other words, avenues for enhanced financial sleight of hand, even beyond the very attractive arrangements that are available just based on what is public.

PART 3 – CONCLUSIONS

The foregoing explanation in detail of the mechanisms used to achieve the 'flag of convenience' status goes some way to demonstrate what underpins the apparently extraordinary performance of the Irish economy, and has certainly inflated the economy materially – which even some Irish officials themselves accept. The apparent economic growth has led to Ireland making much of its success as an EU member, and claim that membership of the EU is a fundamental factor in its economic success. This is clearly not entirely correct, as this paper has explained.

Ireland has materially gamed global tax codes and norms and thereby inflated its GDP by in excess of €130 bn per annum to its benefit. *This has moved production and other business activity from other European countries to Ireland that would not otherwise have been there.*

Given the sheer scale of the Irish 'flag of convenience' it is not credible to believe it is sustainable in the long term. Other EU countries will sooner or later not tolerate the loss of revenues and employment to Ireland. The numbers are increasingly materially well beyond the 'blind eye' that might initially have been turned. Ireland will need friends, for as the EU ultimately seeks to close down these loopholes the impact on Irish growth will be severe.

In the very short term, though, this is a Brexit issue.

Ireland argues vociferously that the UK must remain in regulatory alignment with the EU – i.e. with the Republic of Ireland – through a non-negotiable backstop. One might argue that Ireland's government ought to consider that it is operating an uneven playing field of its own making and that it cannot be in its interests, in the long term, to hamstring the UK against its wishes in regulatory alignment with the EU: inequitable relationships do not last.