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An in-depth look at the data and methods used to capture the Northern Ireland tax base

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Overview

Any move towards further devolution of fiscal powers to Northern Ireland requires careful consideration to be given to the data which is available and its suitability in terms of providing us with accurate figures on the tax base. It is important to understand the accuracy and reliability of the tax estimates for Northern Ireland, as these estimates are a key element of the evidence base that will inform any decision-making process regarding devolution. These estimates could also impact upon the initial block grant adjustments used in the event of devolution (prior to any outturn data becoming available). This means that it is important that estimates of the Northern Ireland tax base are as robust and accurate as possible.

This paper provides a detailed investigation of the data and methodology for capturing revenue raised in Northern Ireland. In doing so it provides insight into any issues in terms of limitations, gaps or concerns about reliability and validity of these data. It also outlines how Scotland and Wales have considered issues of concern around tax data and any steps that they have taken to try to resolve availability or quality issues. Lastly, we consider the potential solutions that could be taken in order to improve the quality of estimates capturing the tax revenue raised in Northern Ireland.

Where does the data capturing the Northern Ireland tax base come from?

There is no Department within the Northern Ireland Executive which is directly responsible for accounting for the amount of taxation revenue raised within Northern Ireland, and ascertaining exactly the level of revenue generated in Northern Ireland is not a straightforward exercise. Furthermore, because taxes are not generally levied or collected on a regional basis (domestic and non-domestic rates being the exception for Northern Ireland) it can be difficult to identify to which country or region tax receipts should be allocated. This is particularly so with indirect and business taxes, which are paid to Government by corporations.

In recent years, regional statistics on public finances, such as public sector revenue and statistics on Northern Ireland's tax base, have been provided through two sources:

(1) Office for National Statistics (ONS) Country and regional public sector finance (CRPSF) statistics – produced since 2017 and classified as experimental statistics.

(2) HMRC Disaggregated Tax receipts between England, Scotland, Wales and Northern Ireland - produced between 2013 and 2020.

Since 2020, HMRC's Disaggregated Tax receipts publication has been discontinued. Therefore, while HMRC currently retain responsibility for producing certain regional tax receipts breakdowns, ONS Experimental Country and regional public sector finance (CRPSF) statistics remains the published source for capturing regional public finance data across all of the UK.

On an annual basis, the Scottish Government publish 'Government Expenditure and Revenue Scotland', otherwise known as 'GERS'. GERS, unlike the experimental ONS CRPSF publications, is a National Statistics publication which is assessed by the independent UK Statistics Authority to ensure that it meets the standards set out in the Code of Practice for Statistics. GERS is an annual estimate of the Scottish fiscal position. It provides a summary of how much revenue is raised in Scotland, how much the country pays for the public services consumed, and to what extent the revenues raised cover the costs of these public services. GERS uses the UK Public Sector Finances statistics as its underlying data source and the methodologies used are broadly consistent with those utilised in the ONS CRPSF statistics publication and, on the expenditure side, with HMT's annual 'Public Expenditure: Statistical Analyses' (PESA)

The data sources for the ONS publication vary depending on the tax, but in general estimates are based on revenue data from the UK-wide Public Sector Finances statistics. A "top-down" approach is then used to calculate country and regional figures from the UK-level data. The allocation of revenue to regions is based on a variety of methods, consistent with the "who pays" concept, i.e. identifying the location where the revenue is raised. ONS use an "indicator" dataset (which varies across the taxes) to apportion total revenue from UK public finance statistics to countries and regions. We discuss in further detail some of the "indicator" datasets and apportionment methods used by ONS for specific taxes in more detail later in this paper.

In broad terms however, much of the data used for CRPSF estimates comes from administrative sources, i.e. actual tax outturn data or other administrative data used as a proxy (e.g. passenger numbers in the case of APD), and is therefore not subject to sampling error (though there may still be underlying errors or issues with the data). However, a non-trivial amount of apportionment data does come from sample surveys. As far as possible, the data is comparable across countries and regions, but certain items necessarily have different data sources for country-level data and English regional data. Table 1 below outlines the data sources used for apportioning taxes to Northern Ireland in the CRPSF.

Table 1: List of data sources used for apportioning taxes to Northern Ireland in CRPSF

Tax	Data source
Income tax	Survey of Personal Incomes (SPI) and modelled using Income Tax liabilities statistics (ITLS) methodology
Value added tax	Living Costs and Food Survey data, published by ONS; and Regional gross value added (GVA) statistics from ONS's regional accounts
National Insurance contributions	HMRC's 1% Pay As You Earn (PAYE) sample
Fuel duties	Department for Business, Energy and Industrial Strategy (BEIS) statistics on Road transport energy consumption at regional and local authority level
Corporation tax (excl. North Sea)	Percentage shares for the ITL1 regions based on HMRC administrative data on Corporation Tax; and data from ONS Inter-Departmental Business Register (IDBR)
Tobacco duties	Living Costs and Food Survey data, published by ONS
Alcohol duties	Family Food report published by the Department for Environment, Food and Rural Affairs (DEFRA) which analyses data from the Living Costs and Food Survey data, published by ONS
VAT refunds	Public Expenditure Statistical Analyses published by HM Treasury, which contains information on government expenditure.

Vehicle excise duties	Department for Transport's Vehicle licensing statistics; Public Sector Finances statistics
Insurance premium tax	Living Costs and Food Survey data, published by ONS
Capital gains tax	Capital Gains Tax administrative data provided by HMRC, covering both individuals and Trusts
Stamp duty land tax	Stamp Duty Land Tax bulletin, published by HMRC
Air passenger duty	Civil Aviation Authority (CAA) data on total terminal passengers travelling from UK airports; and CAA Departing Passenger Survey
Betting and gaming duty	Living Costs and Food Survey data, published by ONS
Inheritance tax	ITL1 Inheritance Tax statistics published by HMRC
Landfill tax	Northern Ireland local authority collected municipal waste management statistics published by the Department of Agriculture, Environment and Rural Affairs (DAERA)
Aggregates levy	UK Minerals Yearbook (UKMY), published by the British Geological Survey
Climate change levy	Electricity consumption statistics for Northern Ireland were obtained from BEIS Sub-national non-domestic electricity consumption statistics in Northern Ireland publication. Gas consumption statistics for Northern Ireland were obtained from Utility Regulator's annual Transparency Reports. Coal consumption statistics for all ITL1 regions were obtained from the BEIS Sub-national residual fuel consumption publication.
Stamp tax on shares	Postcodes for firm-region identification originate from Companies House. Firm name and turnover information originate from the London Stock Exchange monthly Company Trading Summary
Soft Drinks Industry Levy	Family Food report published by the Department for Environment, Food and Rural Affairs (DEFRA) which analyses data from the Living Costs and Food Survey data, published by ONS

Specifically for NI, the values for domestic rates and non-domestic rates, VAT refunds and vehicle excise duties are available directly from Public Sector Finance statistics (and no further apportionment method is required.)

In summary, the ONS Country and regional public sector finance statistics (CRPSF) publication is the central source for capturing regional public finance data across all of the UK.

What are the issues relating to the data and methodology utilised to estimate the Northern Ireland tax base?

ONS CRPSF statistics provide a picture of public sector revenue and expenditure for all countries and regions of the UK. These are currently the only statistics produced within the Government Statistical Service that provide this information for the whole of the UK. ONS caution however, that they may not be an accurate representation of public finances should fiscal powers be fully devolved among UK countries and regions.

The complex process by which the CRPSF estimates are produced means that it is not currently possible to define the precision of the estimates in terms of detailed statistical properties - for example, in the case of estimates from survey data through their standard errors. Therefore, the overall reliability of the estimates is measured by the extent of revisions. Further to this however, the ONS caution that there are other aspects of accuracy which revisions analysis cannot attempt to measure. A value can be reliable (as in, not revised) without being accurate if the underlying methodology or quality of data collected is not of sufficient quality. Thus, the ONS recommend that users of public finance statistics refer to the specific methodological information to judge the accuracy of specific data or whether their particular use of the statistics is appropriate. In this respect, revisions will not pick errors or issues arising from inaccuracies in the underlying methodology itself.

Experimental statistics classification

The ONS CRSPF are classified as experimental statistics. ONS state that these are statistics that are within their development phase and are published to involve potential users at an early stage in building a high-quality set of statistics that meet user needs. It should be emphasised that an Experimental Statistics label does not mean that the statistics are of low quality, it only signifies that the statistics are novel and the methodologies used in producing them are still being developed.

Data sources – survey data or administrative data

Typically the preference would be for administrative data (and more specifically outturn tax data) to be used if available, however for many taxes the use of survey data is necessary given a lack of administrative data. The Living Costs and Food Survey (LCF) is one of the main sources of survey data used in the CRPSF and the Commission's investigations have found a number of issues surrounding the use of the LCF data.

Issues with data from the Living Costs and Food Survey

The Living Costs and Food Survey (LCF) produces certified National Statistics for the UK as a whole, in terms of average weekly expenditure on a range of items per household and numbers of households by country and region. ONS has responsibility for the design, methodology and content of the LCF, whilst the Northern Ireland Statistics and Research Agency (NISRA) works with ONS in the collection of LCF data in Northern Ireland.

The data from the LCF is used in the apportionment of tax values across regions for a number of taxes, including VAT and Excise duties. However, the ONS CRSPF methodology papers recognise that the use of this LCF data in this way is a problem. ONS note that while the LCF is a large, nationally representative survey, when broken down into regions, small cell sizes mean that the there is uncertainty in the estimates.

The NI sampling frame for the LCF has changed on multiple occasions. It was cut from circa 1,200 households to 300 households in April 2009. This was primarily due to funding constraints and this sample size of 300 households was considered proportionate to the NI population relative to the UK rather than the boosted sample size[1]. From April 2016, a sample boost on the NI LCF was put in place, this time to an overall sample of 1,000 households (slightly less than that prior to 2010). This sample boost was designed to increase the robustness of the NI LCF dataset in order to produce the NI equivalent of the specified expenditure estimates that are delivered to ONS National Accounts on a quarterly basis. This sample boost has remained in place since the 2016/17 LCF.

The NI sample, since the 2016/17 boost commenced, has tended to have a response rate of approximately 45%, equating to approximately 380 participating households annually[2]. A three-year rolling average is used to improve the accuracy of estimates, therefore since 2016/17, this rolling average has been based on a sample of approximately 1,150 households providing a response. This increase in sample size since 2016 has had a modest but positive impact on the precision of LCF estimates according to NISRA. These responses are being used to inform estimates of VAT revenue in NI to the value of £3.4bn in 2019/20 and excise duties worth almost £800m in 2019/20.

The achieved number of completed responses on the LCF across the UK annually (circa 5,000 cases) is considered a limitation for any sub-regional analysis. A recently published assessment of the Living Costs and Foods survey from the Office for Statistics Regulations (OSR) has concluded that the LCF data processing system as a whole (i.e. not just for NI) is not fit for purpose[i]. They state that the system is unstable, and as a result often produces inconsistent results between processing runs of data. As a result of the recommendations made in the OSR report the LCF processing system is currently being rewritten to improve efficiency and reduce the risk of future processing errors.

A previous National Statistics Quality Review carried out in 2016 also noted that respondents intentionally do not report certain expenditure items such as alcohol or tobacco, leading to these items being potentially underreported in LCF results.[3]It also recommended carrying out a follow-up survey of households included in the LCF sample, of both responding and non-responding households, to provide further information on non-response bias in the LCF.

As part of its bid for investment under ONS's spending review in 2019, the LCF statistics team highlighted the inefficiency of the data processing systems as a limitation to the development of the quality and accuracy of LCF. Additional funding was eventually secured during 2021/22 to improve the stability of the LCF processing system. This followed unsuccessful bids for additional funding in previous years to develop a new expenditure survey and to deliver a short-term boost to the LCF.

Therefore, a key issue with the LCF relates to its underperformance in terms of small sample size in regions, including in NI, and its response rate in recent years. Furthermore, long-standing known issues related to underreporting of expenditure on certain items, including alcohol and tobacco, presents issues in terms of the accuracy and reliability of the data collected. Consideration should be given to making improvements to the LCF in order to ensure the robustness of estimates, prior to any devolution taking place (of those taxes assessed via LCF). These methodological improvements would be for ONS to consider implementing.

ONS investigation into Living Costs and Food Survey data for Northern Ireland

At the request of the Commission, the LCF team within ONS carried out an internal investigation in late 2021 as to how the small sample size impacts on the volatility in the NI estimates, as well as considering the impact a higher sample size would potentially have on reducing volatility.

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[i] *Office for Statistics Regulations (2021) Assessment of compliance with the Code of Practice for Statistics The Living Costs and Food Survey, ONS: Office for Statistics Regulations.*

In this investigation, ONS looked at the data quality of the Northern Ireland estimates of Total expenditure and a smaller grouping of expenditure on Tobacco, Alcohol and Narcotics. They also did this for the other country and regions within the UK. As regional estimates of the LCF are typically done on a three-year basis, so ONS looked at three three-year samples (2006/07 to 2008/10, 2013/14 to 2015/16, and 2017/18 to 2019/20)[ii].

ONS found that in comparing Northern Ireland to other countries and regions, it was not noticeable that Northern Ireland was subject to more variability when looking into the quality of the data across these three samples. NI's confidence intervals and coefficient of variation are typically smaller than for the average region. This does not change when looking at either Total Expenditure or the only Tobacco, Alcohol and Narcotics expenditure.

The ONS investigation also reiterated that the precision of the estimates from the LCF is linked to the sample size, with a larger sample size increasing the precision of the estimates. This can be seen when comparing the three three-year samples to each other. Those with higher sample sizes have smaller confidence intervals and are more precise. Therefore, in years where there is a lower sample size, there will likely be less precision in estimates.

Overall, the ONS view is that the Northern Ireland data from the LCF is of sufficient quality *for current purposes*. The precision of the estimates for NI are not noticeably different compared to other countries or regions.

That said, ONS are also of the view that a higher sample size would increase the quality of estimates. It is the Commission's view that the issues noted in this paper regarding small sample sizes and accuracy of expenditure data collected, and the subsequent impact on the precision of estimates, mean that there are reservations over how robust or suitable data from the LCF is as an indicator for significant tax values at the regional level, such as VAT and excise duties.

Gross Operating Surplus

The Commission's Interim Report highlighted the issue of Gross Operating Surplus (which makes up 23.8% of total revenues for Northern Ireland in 2019/20) as a revenue item in the ONS CRSPF[iii]. It also noted that consumption of fixed capital, which is equal to Gross Operating Surplus for government bodies due to the 'sum of costs' method of estimating government output, is captured on the expenditure side of the ONS statistics. This means that there is no impact from Gross Operating Surplus on the overall net fiscal balance.

[ii] It should be noted that both the 2006/07 to 2008/10 and the 2017/18 to 2019/20 periods in this analysis would have been based on a boosted NI sample. The 2013/14 to 2015/16 period was during the time when the NI sample boost had been discontinued. It should also be noted that response rates to the LCF (across the whole of the UK) have been falling steadily in the last decade.

[iii] The Gross Operating Surplus values for Northern Ireland are a combination of the profits of public corporations and the derived Gross Operating Surplus for central and local government. For Northern Ireland, it is the derived Gross Operating Surpluses for central and local government that are higher than other regions and driving the overall higher Gross Operating Surplus value for Northern Ireland.

The Gross Operating Surplus values for Northern Ireland are considerably higher than for other UK regions. This is due to the existing ONS methodology where the Gross Operating Surpluses for central and local government, estimated as being equal to consumption of fixed capital as described above, are for the most part apportioned according to civil service headcount. Therefore, regions with a higher per-capita proportion of civil servants – as is the case in Northern Ireland – will end up with a higher value compared to the proportionate share of services the population of that region might be consuming.

ONS have indicated to the Commission that they are revising this methodology and there may be revisions to the Gross Operating Surplus value allocated to Northern Ireland in the future as a result. This improvement in the methodology does mean that Northern Ireland's Gross Operating Surplus is expected to be more in line with other regions in future ONS CRPSF publications.

ONS views on tax revenue estimates for Northern Ireland

The Commission has engaged with ONS to understand their views on the current robustness of estimates for Northern Ireland**. ONS have indicated that in their view, the estimates are the best available using current data sources and methodologies**. ONS have further stated that given the experimental nature of these statistics, they are committed to working with stakeholders to improve the quality and usability of estimates with a view towards them gaining accreditation as official statistics.

ONS have also noted to the Commission that as with all statistics, any assessment of the robustness and accuracy will depend on the potential uses. For example, data subject to modelling might be very reliable at showing trends over time, but might be considered less reliable at showing precise values. In the specific case of the ONS Public Sector Finances estimates that we use for Northern Ireland, this is particularly the case in the most recent year, 2019/20, which is subject to an element of 'nowcasting' using the previous year's proportions.

ONS have also cautioned that the CRPSF estimates may not be an accurate representation of public finances should fiscal powers be fully devolved among UK countries and regions. However, the Commission does note that the Scottish GERS publication, which achieves national statistics standards, utilises in many cases the same data and methods as the CRPSF, although outturn tax data is utilised in the Scottish case for taxes which are devolved.

Revisions to tax receipts data

The ONS methodology states that the overall reliability of the estimates can be understood by the extent of revisions to tax receipts statistics. Table 2 below therefore presents data which captures the scale of revisions made across the various taxes in monetary terms and as a percentage of the tax receipts as originally published (pre-revisions) for the year 2018/19. It does this for both Northern Ireland and the UK as a whole.

Total public sector current receipts for 2018/19 for Northern Ireland were subject to considerable revisions. Specifically, total tax receipts were revised as being £746 million higher than they were originally calculated, which equates to around 4% of total tax receipts as originally published. Whilst revisions occur right across the tax base, the scale of revisions are much greater for some taxes than they are for others. Furthermore, the scale of revisions is much greater in Northern Ireland than it is for the UK as a whole. This can partly be explained by the greater volatility in the Northern Ireland data arising from issues related to timeliness and survey sample sizes. However, the size of Northern Ireland in proportion to the UK can also lead to exaggerated revisions for some data items. The ONS Public Sector Finances data is typically produced to the nearest £m, which in percentage terms can show an apparently significant revision for smaller lines in the context of Northern Ireland tax receipts.

Therefore, **revisions to estimates highlight the higher volatility in estimates for Northern Ireland compared to the UK as a whole. This reinforces the benefit of having regional outturn data available where possible and robust alternatives where not.**

Table 2: Revisions to 2018/19 Total Public Sector Current Receipts excl. PS Banks for UK and NI as published in 2019/20 publication

	UK		Northern Ireland	
	£ m	%	£ m	%
Income tax*	**0**	**0.00**	**100**	**3.47**
Capital gains tax	0	0.00	19	21.59
Miscellaneous taxes on income and wealth	0	0.00	0	0.00
Corporation tax (excl. North Sea)	-548	-0.99	56	6.55
Taxes on income and wealth paid by PCs	35	29.66	1	33.33
Taxes on income and wealth	-513	-0.20	176	4.58
Value added tax, of which:	-30	-0.02	-129	-2.98
VAT net of refunds	-22	-0.02	-132	-3.73
VAT refunds	-8	-0.04	3	0.38
Fuel duties*	**0**	**0.00**	**4**	**0.46**
Business rates paid by market sector bodies	712	2.54	0	
Taxes on land and buildings transactions, of which:	0	0.00	0	0.00
Stamp duty land tax*	**3**	**0.03**	**0**	**0.00**
Land transaction tax	3	1.33	0	0.00
Land and buildings transaction tax	-6	-1.07	0	0.00
Annual Tax on Enveloped Dwellings	0	0.00	0	0.00
Stamp tax on shares	0	0.00	0	0.00
Tobacco duties*	**0**	**0.00**	**-78**	**-14.58**
Alcohol duties*	**0**	**0.00**	**-43**	**-12.39**
Vehicle excise duties paid by businesses	-386	-16.14	-12	-15.58
Other taxes on production, of which:	9	0.03	-22	-1.87
Air passenger duty*	**0**	**0.00**	**1**	**1.27**
Insurance premium tax	0	0.00	-9	-6.00
Climate change levy	0	0.00	11	100.00
Environmental levies	-7	-0.09	4	2.99
EU ETS auction receipts	-54	-16.46	-2	-22.22
Betting and gaming duty	0	0.00	-5	-6.25
Taxes on landfill, of which:	-20	-2.39	-9	-23.08
Landfill tax*	**-20**	**-3.06**	**-9**	**-23.08**

Landfill disposals tax	0	0.00	0	
Scottish landfill tax	0	0.00	0	
Aggregates levy	0	0.00	-8	-29.63
Northern Ireland regional non-domestic rates	0	0.00	0	0.00
Immigration Skills Charge	0	0.00	0	0.00
Soft Drinks Industry Levy	0	0.00	-1	-8.33
Digital Services Tax	0		0	
Other	90	1.01	-4	-2.01
Northern Ireland district non-domestic rates	0	0.00	0	0.00
Taxes on production	305	0.11	-280	-3.58
Bank Levy	0	0.00	0	0.00
Business rates paid by private sector non-profit institutions	16	3.43	0	
Northern Ireland regional domestic rates	0	0.00	0	0.00
Northern Ireland district domestic rates	0	0.00	0	0.00
Other, of which:	1,579	19.39	46	18.47
Vehicle excise duties paid by households	286	6.56	10	7.58
TV Licence fees	0	0.00	0	0.00
Visa Fees	1,249		36	
Miscellaneous other current taxes	44	7.90	0	0.00
Council tax	417	1.21	0	
Other current taxes	2,012	4.37	46	5.22
Taxes on capital	0	0.00	0	0.00
National Insurance Contributions	219	0.16	15	0.51
Gross operating surplus	1,708	3.23	778	33.28
Interest and dividends	838	3.48	16	3.38
Rent and other current transfers	-9	-0.17	-5	-3.09
Other current receipts	2,756	1.22	804	13.55
Total current receipts (excl. North Sea Oil & Gas revenues)	4,560	0.56	746	4.04
Total current receipts (incl. North Sea Oil & Gas revenues by population share)	4,544	0.56	746	4.03

Note: Comparison of public sector current tax receipts statistics data for 2018/19 as published in 2020 as compared to revised data published in 2021.

**Taxes being considered further by the Commission in its Final Report.*

Key issues with data and methodology for those taxes considered further in the Commission's final report

Income tax

Regional apportionment of personal income tax receipts and the income tax base, produced as part of ONS country and regional public finance data, comes from the Survey of Personal Incomes (SPI), which is modelled using Income Tax liabilities statistics (ITLS) methodology. HMRC have indicated that they do not hold administrative data at the required level to apportion income tax between countries and regions on a tax receipts basis and as such, estimates for countries and regions are arrived at using the SPI.

The SPI is based on information held by HMRC on individuals who could be liable for UK Income Tax. Samples of individuals' taxable incomes are drawn from HMRC's Pay as you earn (PAYE) self-assessment and claims administrative systems. Income tax liability statistics are based on a micro-simulation model of the UK income tax system taking account of the main features, including rates, thresholds, allowances and the major tax reliefs and tax credits.

Income tax revenues are apportioned from ITLS based on the total estimated income tax liabilities of residents in each region. The split for England, Scotland, Wales and Northern Ireland is obtained on the basis of the residential postcode of individuals within the SPI rather than where the income is generated (workplace basis). In addition to this, ITLS provides estimates for the current tax year of individual income taxpayer numbers broken down by country/region and by marginal rate of tax (e.g. basic rate taxpayers).

It is important however to draw attention to the fact that there are reasons as to why income tax liabilities statistics might not be appropriate in the estimating of income tax receipts for Northern Ireland, and why in the event of a decision to devolve such fiscal powers, careful consideration would need to be given to getting precise estimates of income tax receipts and the income tax payer base[4]. Most importantly, ITLS statistics are not gathered for the purpose of estimating income tax collected within particular areas. ITLS are focused on income tax liabilities, which are amounts of tax due in respect of individuals' incomes arising in a particular tax year, and reflecting the structure and parameters (e.g. rates, allowances and thresholds) of the UK income tax system in force for each tax year. Thus, ITLS statistics for a particular tax year may differ appreciably from income tax receipts, which are amounts of tax paid and collected in the same year. These differences occur for a variety of reasons including timing, where there are lags in the payment and collection of tax, particularly for self-assessment, or when over or underpayments of tax occur which are repaid or recovered in later years. Perhaps most importantly, while the data is representative of the UK population as a whole, the sample is not stratified by sub-national area and so HMRC[5] caution that these may be less robust at that level. For example, when actual income tax outturns data for 2016-17 was available from Scotland it was somewhere between £500m and £700m lower than what GERs data had estimated[6].

It is worth pointing out that HMRC publish tax receipts data separately to tax liabilities data. Data used in the Income Tax receipts tables comes from HMRC departmental administrative sources. PAYE receipts come from the BROCS system (Business Review of the Collection Service) for all years up to and including 2012/2013. From 2013/2014 PAYE receipts come from a different PAYE accounting system (the Enterprise Tax Management Platform, or ETMP), linked to the Real Time Information (RTI) programme. Self-Assessment receipts come from the HMRC system SAMAS (Self-assessment Management Accounting System). Other components come from the HMRC system SAFE (Strategic Accounting Framework Environment).

Table 2 shows that there were some revisions to income tax estimates in 2018/19, though one of the smaller revisions in percentage in terms at 3.47% of the total value of income tax revenues for that year.

Apprenticeship levy

The Commission recommended that the case for devolution of the apprenticeship levy to Northern Ireland was sufficiently strong to merit further investigation, albeit that, due to the size of the tax, any moves to devolve the apprenticeship levy would be best made following any decision to devolve income tax and/or NICs.

In terms of the data capturing revenue raised from the apprenticeship levy, ONS have provided the Commission with values for apprenticeship levy revenue in Northern Ireland for 2017-18 to 2019-20, with a value of £60m estimated for 2019-20. However, these figures were not published in the previous ONS CRPSF publications (hence apprenticeship levy values are not included in Table 2 above). In previous publications, data on the apprenticeship levy has been captured within the 'Other taxes on production' estimates and a more granular breakdown was not available. This also meant that limited information was provided by ONS on the methodology behind the estimates. The available information does indicate that revenue data for the apprenticeship levy comes from Public Sector Finances statistics and is then apportioned to regions using data on workforce jobs and gross weekly earnings.

If the apprenticeship levy was to be devolved, then as the Commission's Interim Report suggests, it should be devolved alongside either income tax or NICs, which would improve the accuracy of data on earnings for those employees registered for PAYE and in turn provide a specific Northern Ireland source for Apprenticeship levy data. ONS have also indicated to the Commission that they plan to include estimates for Apprenticeship Levy revenues for all countries and regions of the UK in the CRPSF publication going forward.

Alcohol and tobacco excise duties

Data for tax receipts for tobacco products comes from the LCF survey data which include average weekly expenditure on tobacco products per household and numbers of households by country and region. Average weekly household expenditures on tobacco products were multiplied by the average weighted number of households in each ITL1 region to obtain total weekly expenditure per region. UK Tobacco Duty revenues for public sector finances statistics were apportioned to regions using total weekly expenditure per region.

As discussed earlier in this paper, there are concerns about the statistical robustness and reliability of estimates arising from the small sample size for the LCF Survey in Northern Ireland and in turn estimates of alcohol and tobacco revenue for Northern Ireland arising from such data. This is further highlighted by the significant revisions to the estimates for excise duties in Northern Ireland for 2018/19 as shown in Table 2 (14.5% of the total value for tobacco duties and 12.5% of the total value for alcohol duties). Significant revisions were also registered in prior years.

That being said, investigation by ONS into the data quality of the estimates of total expenditure and a smaller grouping of expenditure on Tobacco, Alcohol and Narcotics arising from the LCF in Northern Ireland and other regions of the UK found that in comparing Northern Ireland to other countries and regions it was not noticeable that Northern Ireland is subject to more variability when looking into the quality of the data. This may be due to the extent of underreporting issues being similar in Northern Ireland to other regions and does not override the fact that there are concerns over reliability, only that they are of as much concern for Northern Ireland estimates as for estimates in other countries or regions.

Fuel duties

UK revenues from ONS public sector finances statistics are split between petrol, diesel and other fuels based on proportions calculated from HMRC's historic receipts. HM Revenue and Customs' (HMRC's) Hydrocarbon Oils Duties bulletin[7] is the data source for historic receipts for petrol, diesel and other fuels.

Revenues are then apportioned to regions based on consumption. Department for Business, Energy and Industrial Strategy (BEIS) statistics on Road transport energy consumption at regional and local authority level[8] are used to capture consumption, and have been since 2005. The methodology for calculating fuel consumption combines traffic activity data with fleet composition data. With fuel consumption/emission factors also developed from two mapping datasets. For Northern Ireland a dataset of roads comes from Ordnance Survey of Northern Ireland, part of Land & Property Services Northern Ireland.

No significant data or methodology issues are identified as affecting estimated fuel duties for Northern Ireland. Table 2 shows that revisions for 2018/19 were small at under 0.5% of the total value. However, the issue of fuel tourism related to fuel consumption by Northern Ireland residents in the Republic of Ireland (and at times vice versa) is a separate issue that Northern Ireland faces in terms of its impact on fuel duty revenues that does not exist elsewhere in the UK. This issue will require additional analysis.

Stamp Duty Land Tax

The ONS CRPSF uses outturn data on Stamp Duty Land Tax from the HMRC published Stamp Duty Land Tax bulletin, which includes actual country and regional breakdown of receipts. It provides a split of revenue and transactions between UK regions (at ITL1 level) based on the location of the property being transacted.

Following the typical ONS apportionment approach, these statistics are used to calculate proportions, which are then applied to Public Sector Finances UK total values for Stamp Duty Land Tax receipts to calculate the country and regional values for CRPSF statistics.

It should be noted that the HMRC Stamp Duty Land Tax bulletin only provides data for England and NI and following devolution of Stamp Duty powers, both Scotland and Wales have their own data sources for Scottish Land and Buildings Transaction Tax and Land Transaction Tax respectively. From the FYE 2016 onwards, data for the Scottish Land and Buildings Transaction Tax has been obtained from Revenue Scotland, and from the FYE 2019 onwards, data for the Land Transaction Tax in Wales has been obtained from the Welsh Revenue Authority.

The fact that administrative data for Stamp Duty Land Tax revenues in Northern Ireland are already collected as part of the HMRC Stamp Duty Land Tax bulletin, means that there are no significant data or methodology issues with estimates of Stamp Duty Land Tax for Northern Ireland. No revisions were made to 2018/19 data. This means that should Northern Ireland wish to devolve this tax, a reliable estimate of revenues would be available in advance of any devolution.

Air passenger duty

Revenue data for air passenger duty comes from Public Sector Finances statistics. The ONS CRPSF statistics then use the published Civil Aviation Authority (CAA) data on total terminal passengers travelling from UK airports and the CAA's Departing Passenger Survey (which provides more granular data that indicates the number of passengers flying in each of the destination bands and classes of travel, as well as the number of exempt passengers) as the data sources for apportioning revenue data across countries and regions.

Data from these two sources is combined to provide estimates of the number of passengers across countries and regions by each destination band (based on their final destination) and ticket class. Estimated total passenger numbers by destination band and ticket class based on the data are then multiplied by the current air passenger duty rates to produce APD revenue estimates. These estimates are scaled to the UK total air passenger duty revenue estimate from the Public Sector Finances statistics.

The CAA Departing Passenger Survey only surveys a limited number of airports every year> Whilst both Belfast City and Belfast international Airports were included in the sample for the 2019 survey, prior to that they had not been included in a sample since 2006. Scottish airports are also typically only sampled every 5 years. For all countries and regions, data is interpolated by ONS to provide estimates for years that have not been sampled. This does raise some potential concerns as to the quality of the data for regions. However, the fact that this data is combined with CAA data on total terminal passengers, which does collect data from over 60 UK airports on a monthly basis, including both Belfast airports and City of Derry airport, means that the quality of data can be seen as fairly robust.

No significant data or methodology issues are identified as affecting estimates for air passenger duty in Northern Ireland. Table 2 shows that revisions for 2018/19 were small at under 1.3% of the total value. If Northern Ireland wished to devolve this tax then a recommendation would be that, prior to any devolution taking place, Northern Ireland airports are included on a more regular basis (ideally annually) in the CAA Departing Passenger Survey to reduce the need for interpolation of data.

Landfill tax

Data on the tonnages of waste landfilled in Northern Ireland is obtained from the Department of Agriculture, Environment and Rural Affairs (DAERA), which produces municipal waste management statistics, including data on landfill tonnage. Data used in this report is collected using 'WasteDataFlow', which is a web-based system for local authority collected municipal waste reporting. It is used by all UK local authorities.

Landfill tax revenue is then apportioned to English regions and Northern Ireland based on the estimated tax liability for each region. The liabilities for each region are derived by assigning each region's tonnages of waste to standard and reduced rates depending on its European Waste Catalogue (EWC) waste category and then aggregating waste tonnages by region to get total tonnage figures. These total tonnage figures are then multiplied by the tax rate per tonne to deduce total tax liabilities by region.

The method for apportioning revenue to Scotland and Wales is different given that they have both devolved powers over landfill tax. From the FYE 2016 onwards, outturn data for Scottish Landfill Tax, as collected by Revenue Scotland, is used for Scotland, and for the FYE 2019 onwards, outturn data for Landfill Disposals Tax, as collected by the Welsh Revenue Authority, is used for Wales.

No significant data or methodology issues are identified as affecting estimates for landfill tax in Northern Ireland. However, Table 2 does highlight significant revisions to the estimates for landfill tax in Northern Ireland, at 23% of total value, for 2018/19, though revisions were minimal in previous years. Therefore, should Northern Ireland wish to devolve this tax, a reliable estimate of revenues would be available in advance of any devolution.

Key issues with other major taxes

National insurance contributions

The ONS CRPSF data source for national insurance contributions (NICs) comes from a regional (i.e. International Territorial Level (ITL) 1 regions) breakdown of Class 1 NICs from HM Revenue and Customs' (HMRC's) 1% sample of Pay As You Earn (PAYE) from the National Insurance Recording System (NIRS2), where data is available on a residential basis. However, some unknown and non-UK addresses are also pro-rated to ITL1 regions. Percentage breakdowns for each ITL1 region are calculated from the Class 1 NICs data and applied to the UK total of all NICs revenue.

The HMRC disaggregated tax receipts estimates sources NICs data for 2018-19 from HMRC's Real Time Information for Pay As You Earn (PAYE RTI) system. Tax years from 2014-15 to 2017-18 were revised in the latest publication to also use data sourced from RTI but for earlier years data from a 1% sample of Pay-As-You-Earn (PAYE) is still used. The RTI administrative system covers all employed individuals paid under PAYE rather than a sample.

As outlined in the Commission's Interim Report, NI has a separate National Insurance Fund into which an estimate of the share of UK-wide NICs that are from Northern Ireland-based employed and self-employed individuals are paid. In order to apportion NICs values to NI, the postcode of each employee or self-employed individual is extracted from the PAYE RTI system to estimate the share of individuals who have paid NICs that reside in Great Britain and Northern Ireland. These shares are then rounded to the nearest percentage point and applied to UK wide NICs revenues to apportion them between the Great Britain and Northern Ireland National Insurance Funds. Thus, the apportionments are based on rough estimates of the NICs from Great Britain and Northern Ireland, rather than a precise calculation using the actual NICs paid on the earnings of specific employed and self-employed individuals. Table 2 further shows that revisions for 2018/19 were small at only 0.5% of the total value.

Value added tax

The ONS public sector finances VAT receipts estimates are based on a number of data sources. The most important source is the ONS expenditure analysis of the 'Living Costs and Food' (LCF) survey, which measures average weekly family spend on a range of items for England, Scotland, Northern Ireland and Wales. Also used is the 'Public Expenditure Statistical Analysis' (PESA), which covers the majority of government expenditure activity: ONS data on Gross Value Added (GVA); and population estimates from ONS, National Records Office for Scotland and Northern Ireland Statistics & Research Agency. Table 2 shows that revisions for 2018/19 were relatively small at 3.3% of the total value.

As discussed earlier in this paper, there are concerns about the statistical robustness and reliability of estimates, arising from the small sample size and low response rate for the LCF Survey in Northern Ireland as well as methodological issues which could then in turn impact on estimates of VAT receipts arising from such data.

Corporation Tax

The UK figure for total corporation tax is taken from the Public Finances Databank published by HM Treasury. North Sea corporation tax payments are deducted using data from HMRC published tables on corporation tax. The estimate of NI corporation tax excludes North Sea corporation tax. NI's share of UK corporation tax (excluding North Sea revenues) is taken to be its share of profits (less holding gains) of all public and private corporations in the UK. Information on profits (less holding gains) is directly supplied by ONS and comes from HMRC administrative data on corporation tax and data from the ONS Inter-Departmental Business Register (IDBR). A three-year average of 2016-17, 2017-18 and 2018-19 is used to estimate 2019-20 proportions for each region.

In efforts to ensure that regional shares of corporation tax are allocated correctly to the region, taxable profits are split into two categories, which are aligned with the different category income streams for corporation tax.

Category (i) includes overseas income, interest income, income from land and property, chargeable gains and gains on intangible assets. Category (ii) principally contains trading profit which makes up the vast majority of taxable profits.

All category (i) profits are allocated to the location of the registered office. Category (ii) profits are allocated to countries according to the sub-national split of enterprises' employment totals; however, if no information is available from the IDBR on the location of a company's employment, then the profits are allocated to the registered office location. Where employment data is available at the group level but not the enterprise level, then companies' category (ii) profits are allocated between the sub-national areas in line with the rest of the group. Some research does suggest that this approach could underestimate the tax related to profits actually earned by branches of firms in Northern Ireland who have their head offices elsewhere in the UK.[9]

Data from the IDBR on local employment for enterprises is extracted and aggregated for each IDBR 'enterprise'. The proportion of each enterprise's employment that is in each of the four countries is calculated. This enterprise-level data is then joined to the company-level data from HMRC's corporation tax administrative system (COTAX) using the company registration number. Each IDBR enterprise may match to one or more companies, while each company matches to only one enterprise. The corporation tax data is taken from data on corporation tax assessments, returns and designatory data from COTAX, the commercial accounts database Financial Analysis Made Easy ('FAME') and postcode geographies. If all employment is based in a single sub-national area, then all category (ii) profits are allocated to the location of the registered office.

Country of Ownership split by Northern Ireland and Great Britain has been available since 2013. In 2020, close to 800 enterprises operating in Northern Ireland, or around 1% of the total, had a Great Britain ownership. These enterprises accounted for circa 10% of total employment in Northern Ireland.

Table 2 shows that revisions for 2018/19 were greater at 6.5% of the total value than for other substantial taxes such as income tax, NICS, VAT or fuel duties.

What were the views of the previous Commissions in Scotland and Wales on the availability and robustness of data capturing the tax base?

It is important to highlight that the sources of UK country and regional tax data that we have discussed here were not available at the time that the Calman, Holtham or Silk Commissions, established in Scotland and Wales to examine the case for fiscal devolution, were undertaking their work. The HMRC Disaggregated Tax receipts between England, Scotland, Wales and Northern Ireland publication was first published in 2013. It was not then until 2017 that the ONS CRPSF statistics were first published. In this context, it is perhaps unsurprising that the previous Commissions did not consider the reliability of tax data in any great detail. Nevertheless, it is notable that despite not having the extensivity of data which are currently available, the comparative Commissions in Scotland and Wales worked on the assumption that data issues were surmountable and so did not conclude that data issues were such that they would render fiscal devolution infeasible.

It is nevertheless worth pointing out that despite not devoting detailed attention to these issues, the Calman, Holtham and Silk Commissions did raise concern over the availability of tax data at a regional level. Calman (2008) noted that that most Scottish tax receipts were not separately identified with some taxes such as Corporation Tax being especially difficult to define. It noted *“Major challenges of estimation are involved, and the breakdown of tax revenues in GERS shows the difficulties involved.”*

Holtham (2010) included a recommendation concerning improved statistics, though this was more focused on expenditure rather than revenue[iv] and recommended that UK national accounts should include a ‘provincial’ tier of government spending.

Silk (2012) similarly recommended that the ONS UK accounts should include a ‘sub-national’ tier of government spending. It also expanded further to recommend “*that figures on the amount of tax collected in Wales should be produced. Such figures should also include estimates of the Welsh fiscal balance. This country and regional analysis should be done on a consistent basis across the United Kingdom.”*

More recently, under the Scotland Act 2016, the UK Government agreed to assign the first 10p of the standard rate of VAT (20%) and the first 2.5p of the reduced rate of VAT (5%) raised in Scotland to the Scottish Government. However this assignment of Scottish VAT revenues to the Scottish budget has been delayed. This delay has been due to challenges around reliably estimating Scotland’s share of VAT estimates based on the data currently available (e.g. from the LCF). A Scottish VAT assignment model has been jointly developed by HM Revenue and Customs, the Scottish Government and HM Treasury, however this model has not yet been finalised or fully agreed. In October 2020 the UK and

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[iv] The recommendation was that “the Assembly Government should seek modification of the UK’s national accounts to include a “provincial” tier of government spending. This reform would ensure that official statistics reflect the reality of devolved government and would help clarify the distinction between expenditure by UK Government departments and by the devolved administrations.”

Scottish Government agreed that a new implementation date will be established as part of the review of the Scottish Government's Fiscal Framework[10].

The development by ONS of the CRSPF statistics and its publication from 2017 onwards has addressed in part the recommendations made by the Holtham and Silk Commissions in terms of additional tax revenue and public spending data being available at country and regional level within the UK. However, as detailed in this paper, there still remains potential to further improve the suitability of the ONS statistics being used to estimate the fiscal base at a regional level, given the limitations of the data available and the methods of apportionment currently in place.

What are the possible solutions to improving the reliability of tax estimates for Northern Ireland?

When considering what possible solutions could be put in place to improve the reliability of tax estimates for Northern Ireland, it is important to understand the difference between:

i) What is possible to achieve prior to any decision regarding devolution of further fiscal powers, i.e. ensuring the most robust data and thus estimates of revenue are available, which would then help inform any decisions regarding any devolution;

ii) What can be done once a decision to devolve a tax has been made, but before devolution has happened, to ensure there are no major surprises or issues post devolution; and

iii) What would be possible (or even a requirement) after devolution has taken place, this could include how any outturn data is published.

In general, one of the most effective changes that would improve the reliability of estimates would be to make more use of administrative data, where possible.

However, this would not be easy to achieve for a number of taxes and could also require an additional burden to be placed on business. For example, it would require VAT returns or Company Tax Returns (used to calculate Corporation Tax) that are provided to HMRC to include regional breakdowns. Therefore, the feasibility of doing this remains questionable and may not be feasible until after devolution takes place, given the additional costs and additional burden it would place on business. ONS are currently looking to improve their collaboration with HMRC in regards to developing secure methods for sharing and using existing administrative data

Making more use of administrative data may be more feasible for Income Tax – Scottish income tax estimates are now based on administrative outturn data from HMRC's Scottish Income Tax Outturn Statistics and this is an approach that could be replicated in Northern Ireland if Income Tax was to be considered suitable for devolution. However, it should be noted that there are still issues with the data for Scottish Income Tax. There is a long lag to the data and HMRC's Pay as You Earn (PAYE) Real Time Information (RTI) does not provide good predictions for the Scottish Income Tax Outturn Statistics for reasons that are still unclear. This means that there are challenges in developing an up to date estimate for Scottish income tax prior to the official Outturn Statistics being published. These same issues would also be applicable in the case of income tax being devolved in any form to Northern

Ireland. There would also be significant costs in collecting administrative data, so this would likely only be feasible to do after a firm decision has been made to devolve.

Furthermore, embedding administrative data into the production of regional statistics would likely take some time, and to some extent would probably still need to be augmented with specific survey information. Therefore, when administrative data is not readily available, action needs to be taken to ensure a high level of accuracy and reliability of survey data. This would require efforts to improve both data processing and the size of the sample in any existing surveys currently used, in order to ensure larger sample sizes at smaller geographical levels, for example UK ITL1 regions. As highlighted previously, much of the data used for CRPSF estimates does come from administrative sources - either being based on samples of administrative data (e.g. Income tax, national insurance contributions), using existing outturn data from another source (e.g. Stamp duty land tax and data from the Stamp duty land tax bulletin) or directly using outturn data from ONS Public sector finance statistics without the need for any apportionment method (i.e. domestic & non-domestic rates; vehicle excise duties; and VAT refunds).

Given the potential issues with obtaining further administrative data, an alternative is to look at how improvements could be made to the survey data that is currently used, either prior to the decision on devolution being made or at least prior to the devolution actually occurring. New and/or existing surveys should be designed to take account of the need for more robust regional statistics.

However, given the potentially high costs involved in sampling at a regional level, exactly how this should be done would depend on a relative assessment of the costs and whether a boosted sample would fully resolve the issues. For example, in the case of LCF survey and issues with it in terms of underreporting of expenditures, further resources would be required to improve data accuracy and ensure that data captured is of sufficiently high quality. Therefore, improving the quality of survey data is something that could be carried out prior to any decisions regarding further devolution, if it could be demonstrated that the additional costs would bring about enough of a benefit in the estimates to make incurring them worthwhile.

ONS have noted to the Commission that they are already considering some potential improvements to help the reliability of data. Some ideas are at an early stage of development, for example, using more timely administrative data for VAT or Corporation Tax and exploring the use of HMRC administrative PAYE data for Income Tax. Other ideas might be more readily achievable, for example, ONS are currently investigating the suitability of using population estimates based on the Labour Force Survey (LFS) for the number of households, rather than relying on the outputs of the LCF survey.

An example of attempts to improve survey data can be found in the ongoing work being carried out by the UK and Scottish governments to better estimate VAT revenues for Scotland, following the agreement to assign approximately half of VAT revenue raised in Scotland to the Scottish budget. The Scottish and UK governments and HMRC have together developed a VAT assignment model for Scotland and the LCF survey remains a primary data source. However, this has proved to be a difficult exercise and no methodology has been agreed upon after several years of work. Even the boosting of survey sample sizes has not been a sufficient solution. A particular issue here is that assigning VAT revenue to Scotland rather than actually devolving VAT powers in some form means that placing the additional burden of extra paperwork or administration onto business is not cost-effective. These same issues would also be applicable for Northern Ireland if VAT was to be potentially devolved in any form, meaning the lack of a reliable VAT estimate could be seen as a similarly major obstacle for assigning VAT revenues to Northern Ireland.

ONS have indicated that if more NI-specific source data were to be made available, such as outturn tax receipts in NI, then this would be welcomed by them. ONS would then be able to include any such NI-specific source data in the regional breakdown of Public Sector Finances (PSF). A precedent already exists in this manner, whereby various tax receipts, i.e. of taxes devolved to Scotland, are published by the Scottish Government and are then used as source data within both GERS and the ONS Country & Regional PSF publication. ONS are of the view that GERS as a national statistic is an authoritative and referenceable source of regional data.

This then raises the question as to whether developing something similar to GERS for Northern Ireland would be of value. In fact, between 2006-07 and 2013-14, the Department of Finance produced a publication, the Northern Ireland Net Fiscal Balance Report, which largely mirrored GERS and CRPSF. However, the Northern Ireland Net Fiscal Balance Report was discontinued on the basis that when the CRPSF began publication there was no added value from replicating its work.

At this stage, the Commission's view is that nothing has changed in this regard and there is no justification for restarting such a publication. However, should further fiscal devolution take place and new outturn data become available then perhaps there may be a case. An alternative would be to work with ONS to make sure that any new outturn data for Northern Ireland becomes fully incorporated into the CRPSF methodology to increase reliability and robustness of Northern Ireland estimates for any devolved tax.

The UK Government's February 2022 White paper "Levelling up the United Kingdom"[11] considers the importance of having robust regional or subnational data throughout the UK, including on public sector finances. The Government Statistical Service's (GSS) Subnational Data Strategy was published in December 2021 with similar ambitions. It remains to be seen if these strategies will lead to improvements in regional data over time.

In short, it is important to be aware that any assessment of NI tax estimates made before any further devolution of powers will perhaps inevitably involve some form of modelling or estimation. Using Scotland as an example, further devolution of tax powers may itself help to address the availability of useful source data at the NI level, but also has its own issues, such as data lags.

A further avenue to explore would be for representatives from relevant NI Executive departments to consider gaining membership to the ONS Country and Regional Public Sector Finance peer review group or the Sub-UK Public Sector Finances Working Group. Participation in these groups would provide an opportunity to be involved in the quality assurance of outputs prior to publication. It could also provide an avenue to raise concerns and potentially widen the collective understanding of the available data on tax estimates. ONS are also currently developing a new Statistical Business Register and it may be useful for NI representatives to engage with ONS to understand if it could play a role in collecting additional tax data from businesses.

What are the key takeaways in the context of the Commission's work?

The ONS CRPSF statistics publication is now the central source for capturing regional tax receipt data across all of the UK. This has addressed, at least in part, the recommendations made by the Holtham and Silk Commissions in terms of additional data being available at country and regional level within the UK. However, there remains the potential to improve the suitability of the ONS statistics being used to estimate the fiscal base at a regional level, given the limitations of the data available and the methods of apportionment currently in place.

This paper helps to demonstrate some of the limitations of the data captured on taxes that could potentially be devolved to Northern Ireland and highlights the specific issues across different taxes.

Recommendations for the NI Executive regarding tax data reliability

It is the Commission's view that if Northern Ireland wishes to pursue further fiscal devolution then it would be prudent to consider, at the earliest possible opportunity, what steps or actions could be taken to improve the data reliability for the taxes it wishes to pursue. This should include consideration of whether data issues are so insurmountable that they become an impediment to devolution altogether (as seen with VAT in Scotland).

We recommend that the NI Executive should work with ONS, HMRC and NISRA to improve data on tax receipts in Northern Ireland.

This should include the consideration of increasing the sample sizes of surveys as well as examining what other improvements could be made in order to boost response rates and solve methodology issues (e.g. underreporting issues).

The NI Executive should look to collect, where reasonably possible, administrative/outturn data for any tax that is to be devolved in the years prior to devolution taking place. This should help to provide more reliable estimates of the tax prior to devolution and more accurate costs post devolution.

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