

Kenny, Sean

Working Paper

Irish GDP since independence

QUCHE Working Paper Series, No. 24-05

Provided in Cooperation with:

Queen's University Centre for Economic History (QUCHE), Queen's University Belfast

Suggested Citation: Kenny, Sean (2024) : Irish GDP since independence, QUCHE Working Paper Series, No. 24-05, Queen's University Centre for Economic History (QUCHE), Belfast

This Version is available at:

<https://hdl.handle.net/10419/295737>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



QUCHEH WORKING PAPER SERIES
<http://www.quceh.org.uk/working-papers>

IRISH GDP SINCE INDEPENDENCE

Seán Kenny (University College Cork and Lund University)

Working Paper 24-05

QUEEN'S UNIVERSITY CENTRE FOR ECONOMIC HISTORY
Queen's Business School
Queen's University Belfast
185 Stranmillis Road
Belfast BT9 5EE

May 2024

Irish GDP Since Independence^{*}

Seán Kenny[†]

Abstract

This paper constructs annual GDP estimates for Ireland (1924-47) to join the first complete official aggregates. The new series is deployed to revisit Ireland's economic performance in the post-independence decades. Ireland's economy grew at 1.5 per cent per annum and average living standards improved by 40 per cent. The bulk of this was due to labour productivity improvements stemming from workers moving out of agriculture. Starting in 1924 captures the civil war recovery and paints a more positive picture of the 1920s, while the traditional narrative of a "mild" Great Depression is upheld. The 1930s recovery was aided by strong contributions from services and industry, while the economy contracted by 7 per cent during the early "Emergency". Though supporting O'Rourke's view that Irish growth was not unique against European peers, the new data provide evidence of stronger convergence against UK regions. Industry contributed most to growth during the period, growing at 3.6 per cent per annum. The equivalent rate for services was 1.3 per cent, though it contributed substantially during recovery periods. Agricultural output hardly changed due to its post-war contraction. This paper joins a growing number of studies that suggest that Ireland was poorer at independence than previously believed.

Keywords: Historical National Accounts, interwar period, Ireland, GDP, comparative growth, regional GDP, productivity.

JEL Classification: N1, N14, O4, O47, EO1.

^{*} The paper benefitted from funding from the Science Foundation of Ireland-Irish Research Council Pathways Initiative (SFI-IRC 21/PATH-A/9390). For comments and replies to my questions on this paper over the last few years, I am grateful to Alan de Bromhead, John FitzGerald, Frank Geary, Jonas Ljungberg, Eoin McLaughlin, Cormac Ó Gráda, Kevin O'Rourke, Ryland Thomas and John Turner. I am especially grateful to Jason Lennard for advice and to Frank Barry for generously providing his industrial employment data. The paper benefitted from comments received at the Irish Economic and Social History conference in Cork (2019), the Queen's University Belfast EH Seminar series (2020) and the *makromackan* seminar series in Lund (2021). The work of my late supervisor, Lennart Schön, provided the original inspiration for this paper.

[†] Department of Economics, University College Cork; Department of Economic History, Lund University; Centre for Economic History, Queen's University Belfast; Centre for Economics, Policy and History. Email: sean.kenny@ekh.lu.se.

I

A century has passed since Ireland gained independence from the United Kingdom.¹ The years around the centenary have been accompanied by a wave of research reassessing Irish economic performance and policies since 1922.² As the military struggle was by nature nationalistic, economic policy was plagued by “unrealistic expectations” that Irish recovery would begin immediately, once inappropriate imperialist policy was removed.³ However, as noted by O’Rourke⁴, the Irish economy would remain a *de facto* region of the UK’s, until it eventually entered the European Economic Community (EEC) in 1973. This paper revisits those first decades of political independence and produces the first set of annual GDP estimates for the period 1924-47. The new series is deployed to evaluate Ireland’s interwar growth record afresh and is linked to the first complete set of official national accounts in 1947, providing economists, for the first time, with a century of unbroken annual GDP data for Ireland. An online data appendix provides researchers with an annual series for GDP and GNP in nominal and real terms (in IE£s and €s) spanning 1924-2022.

The first quarter century of life for the Irish Free State⁵ was marked by the Great Slump in the UK,⁶ the Great Depression, the Economic War with Britain and the Second World War, during which Ireland remained neutral. Apart from the trade war among this list, there is little Ireland’s policy makers could have done to prevent them from affecting economic activity. Still, as one of Ireland’s leading economic historians wrote, “few would deny that the Southern Irish economy performed poorly between the 1920s and the 1950s”.⁷ In a 1988 study, Kennedy et al argued that the preoccupation of the 1920s was to establish the legitimacy of the new state, while the subsequent administration elected in 1932 emphasised issues of sovereignty and during World War 2 the security of the neutral state and economic survival necessarily took precedence. Thus, “it was not until 25 years after the achievement of independence that economic development could receive the degree of attention that might otherwise have been expected from the start”.⁸ Lee’s (1989) account was less forgiving and asserted that ‘Irish economic performance has been the least impressive in western Europe, perhaps in all Europe, in the twentieth century.’⁹

¹ The Acts of Union of 1800 (40 Geo. 3 c.38), incorporated Ireland (32 counties) into the United Kingdom. The Anglo-Irish Treaty (December 1921) granted political independence to southern Ireland (26 counties). Northern Ireland (6 counties) opted to remain within the UK under the Government of Ireland Act of 1920.

² Ó Gráda and O’Rourke, ‘Irish Economy’; Kenny and McLaughlin, ‘Political Economy’; Barry, *Industry and Policy*; Barry and Drea, ‘Reappraisal’; FitzGerald and Honohan, *Europe*.

³ Kennedy et al., *Economic development*, p. 255; Meenan, *Irish economy since 1922*, pp. 270-5.

⁴ O’Rourke, ‘Independent Ireland’.

⁵ Henceforth “Ireland”.

⁶ Crafts, *Forging Ahead*, pp. 60-78; idem, ‘Walking Wounded’.

⁷ Ó Gráda, *Rocky Road*, p. 1.

⁸ Kennedy et al., *Economic development*, p. 255.

⁹ Lee, *Ireland 1912–1985*, p. 521.

Recent work has painted Ireland's interwar economy in a more favourable light, suggesting that its growth record was not atypical, given prevailing international conditions.¹⁰ Others highlighted policies that enabled Ireland to avoid the instability that plagued many emerging nation states in the 1920s.¹¹ The current consensus is that while the "character of progress since the 1920s" was "uneven",¹² Ireland's economic performance over the century as a whole was not unique.¹³ Despite these valuable assessments, based upon the best available benchmark data, official national accounts for the 1920s and 1930s are lacking on an annual basis.¹⁴ While benchmark data are available, they typically represent some variation of the important work of Duncan's national income estimates.¹⁵ As noted elsewhere, "scholars attempting to replicate Maddison's Irish estimates will find it difficult," though no alternative dataset has been constructed in its stead.¹⁶ Although benchmarks are suitable for convergence-based studies,¹⁷ the assessment of economic responses to specific events has remained largely conjectural, based on narrative history.

The motivation of this paper is to fill this gap in annual GDP estimates (1924-47) and to revisit the old debates with the newly constructed GDP series, comprised of over 80 underlying production series. In this sense, the paper joins a growing tradition in Irish economic history that attempts to form a picture of economic activity through the construction of macroeconomic series consisting of financial market data,¹⁸ monetary data,¹⁹ banking sector and credit data,²⁰ fiscal data,²¹ consumption and price data,²² wealth and genuine savings estimates²³ and alternative output measures.²⁴ It also contributes to the recent international expansion of historical national and regional accounts.²⁵ Nonetheless, it is recognised that the estimates produced in this work are merely a first iteration towards estimating Irish economic growth (1924-47) and are by no means, intended to represent the final word. Rather, in the

¹⁰ O'Rourke, 'Independent Ireland'.

¹¹ Barry and Drea, 'Reappraisal'.

¹² Ó Gráda, 'Five crises'.

¹³ O'Rourke, 'Independent Ireland'.

¹⁴ Ó Gráda, *Ireland*, p. 383.

¹⁵ Duncan 'Social Income'; Kennedy et al., *Economic development*; MPD 2020.

¹⁶ McLaughlin, 'Writing'.

¹⁷ Ó Gráda and O'Rourke, 'Irish Economic Growth'; idem, 'The Irish Economy'; Geary and Stark 'Examining; idem, 'Regional GDP; idem '150 Years'.

¹⁸ Foley-Fisher and McLaughlin, 'Sovereign Debt'; Hickson and Turner, 'The rise; Grossman et al. 'Monthly Stock Exchange'.

¹⁹ Kenny and Lennard, 'Monetary Aggregates'; Gerlach and Stuart, 'Money'; O'Rourke, 'Monetary Data'.

²⁰ Kenny and Turner, 'Wildcat Bankers'; Kenny et al. 'Macroeconomic Effects'; McLaughlin, 'Profligacy'; Stuart, '70 years'

²¹ FitzGerald and Kenny, 'A Century'.

²² FitzGerald et al. 'Household Behaviour'; Stuart, '70 Years'

²³ Daly and Morgan, 'Great Capital Migration'; Cummins and Ó Gráda, 'Structure of Wealth'; McGrath et al. 'Reassessing'.

²⁴ Geary and Stark 'Examining; idem, 'Regional GDP; idem '150 Years'; Bielenberg, *Ireland*; Bielenberg and O'Mahony, 'Expenditure Estimate'; O'Rourke, 'Monetary Data'; Andersson and Lennard, 'Irish GDP'; Kenny et al., 'Annual Index'; Turner, *After the Famine*.

²⁵ Enflo and Missiaia, 'Regional GDP'; Rosés and Wolf (eds.), *Economic Development*.

spirit of Broadberry et al., it is hoped that the estimates will “prompt debate and provoke and stimulate others to undertake more work and in due course come up with a more robust set of results”.²⁶

While the new GDP estimates do not overturn the standard narrative of Irish economic performance over the interwar period, the new data provide, for the first time, a solid underpinning for existing theories. The Irish economy grew at just under 1.5 per cent per year during the years 1924-47 in real terms. However, this rate is inflated by the civil war recovery years (1925-26) and the post war recovery (1945-47). When these are removed, the growth rate falls to 0.8 per cent per annum, supporting Ó Gráda’s pessimistic view.²⁷ Nonetheless, given the “bleak picture of economic conditions between 1939 and 1945,”²⁸ it is perhaps fairer to assess the record between 1926 and 1938, when the economy grew at 1.4. per annum, which provides a marginally more positive picture than present estimates.²⁹ The growth rates obtained from the new series are closely in line with the estimates of Kennedy et al and the post-1933 series of Gerlach and Stuart.³⁰ Taken together, all three studies agree that Maddison’s growth rates are too pessimistic and consequently imply that the (initial) 1924 *level* of income estimated by the latter is too high.³¹ The main source of divergence between the series emanates from the crisis periods (1921-4, 1929-32, 1939-44), during which Maddison assumes no change in the volume of activity. The finding that Ireland was poorer than previously believed is not new,³² though it augments the growing literature which questions Lee’s bleak assessment of Ireland’s relative decline.³³

The new series begins in 1924, rather than the traditional starting point of 1926 (a *Census* year constraint).³⁴ It therefore captures the post-civil war recovery and offers a more positive assessment of the 1920s, which delivered annual growth of 3 per cent between 1924 and 1929. This supports Barry’s claim that growth in the 1920s should be higher than traditional accounts have estimated from the later starting point (1926).³⁵ The economy of the 1930s, which faced depression and a protectionist war with Britain, produced GDP growth of 1.9 per cent per annum for the period 1932-8, while the equivalent for the post-war years (1945-47) was almost 3 per cent.

How did the economy react to the major economic shocks of the period? While historical accounts of the Great Depression in Ireland³⁶ had limited data to draw conjectures from, the new series supports the view that the Depression in Ireland was comparatively “mild”, as the economy contracted by 1.4 per cent between 1929 and 1932. Though Daly’s analysis terminates in the summer of 1932, she noted the important changes in economic policy “resulting in a significant increase in public expenditure

²⁶ Broadberry et al., *British Economic Growth*, p xxii.

²⁷ Ó Gráda, *Rocky Road*, p. 1.

²⁸ Ó Gráda, ‘Five crises’.

²⁹ MPD 2020.

³⁰ Kennedy et al., *Economic development*; Gerlach and Stuart, ‘Money’

³¹ MPD 2020.

³² Geary and Stark, ‘Regional GDP’, MPD 2020; RWD 2020.

³³ Lee, *Ireland 1912–1985*, p. 521.

³⁴ Consistent data are lacking during the Civil War (1922-3); Linehan, ‘Development’.

³⁵ Barry, *Industry*, p. 67.

³⁶ Barry and Daly, ‘Irish perceptions’; Daly, ‘Irish Free State’.

and taxation”.³⁷ Indeed, the new series reveals strong contributions from (public) services to recovery after 1932, in contrast to the deterioration in trade. However, World War II (referred to as the ‘Emergency’ in neutral Ireland) produced an economic contraction of almost 7 per cent by 1943 from its 1939 level. Only the financial crisis of 2008, surpassed this event in terms of severity since independence. All sectors, apart from agriculture, suffered from negative growth during ‘the Emergency,’ while the reverse occurred during the post-war recovery.

The new series supports O’Rourke’s view that given Ireland’s initial level of income, its performance was not unique amongst its relevant peer group for the period 1926-38.³⁸ However, when one takes the earlier starting point of 1924, its relative performance is improved, given higher growth rates in the early 1920s. Furthermore, the new data allow for fairer comparison with UK regions, as they include a unique estimate for 1925, which is the official starting benchmark in the Rosés and Wolf (2020) regional GDP database for the interwar period.³⁹ Ireland’s degree of (within-UK) convergence was stronger than previously believed for the period 1925-50. Lastly, despite adverse international conditions during the post-independence decades, Irish interwar economic performance generally surpassed that of the 1950s and the 1980s, in terms of average growth rates.

The paper is structured as follows. Section II discusses the methodology used to calculate GDP, though detail is reserved for the Appendix. Section III explores sectoral growth, economic performance, and productivity. Section IV compares the new series to existing benchmark estimates. Section V compares Ireland’s economic performance against other countries during the interwar period and considers its growth record over each decade since independence. Section VI concludes the paper.

II

In order to arrive at GDP, “you can add up all the output of the economy, all the expenditure in an economy or all the incomes”.⁴⁰ Officially, the three respective methodologies represent the output, expenditure the income approaches to calculating GDP. Table 1 summarizes them formally.

<<TABLE 1 HERE >>

No annual estimates have been produced for Ireland using the expenditure approach for the full interwar period, though data on net exports and government spending are available from 1924. However, consistent and reliable data on consumption and investment are presently lacking.⁴¹ The accuracy of total days worked is problematic for the income approach, though important earlier attempts have been made.⁴²

³⁷ Daly, ‘Irish Free State’.

³⁸ O’Rourke, ‘Independent Ireland’.

³⁹ RWD 2020.

⁴⁰ Coyle, *GDP*, p. 25.

⁴¹ FitzGerald et al., ‘Household Behaviour’.

⁴² Kiernan, ‘National Income’; Duncan, ‘Social Income’; McCarthy, ‘Symposium’; Hughes, ‘Functional Distribution.’

This leaves the output (production) approach, which sums the *value-added* of each sector in the economy. Economic historians have made use of this approach, due to data limitations proscribing the two alternative methods.⁴³ While the ideal objective is to measure output quantities directly from available historical data, direct evidence of output is often unavailable for all activities. Although such data often represent the best long run production numbers one can hope to obtain, it is widely recognised that they typically represent *gross* production, *not* strictly *value-added* (net output = gross product minus intermediate inputs). Given the scarcity of value-added data over longer time horizons, such (gross) volume indices are a feature of major historical GDP studies.⁴⁴ When direct measures of output are unavailable, proxies are often employed to model the primary activity, such as key inputs or exports, where the domestic market is limited.⁴⁵ The output approach requires benchmark value-added weights for each sector (in current prices) in order to merge agriculture, industry and services into a composite GDP index. The implication is if we multiply a value-added weight by a volume index, we obtain a value-added index. Obviously, the further the distance (in years) between such benchmarks, the less robust the approach. The further back in time one extends, the less frequently available are the required benchmarks.

In Ireland's case (1924-47), direct measures for value-added *are* available for many years over the interwar period for both agricultural and industrial production.⁴⁶ Unfortunately, data on service production volumes are absent, and of the three sectors, the construction of service sector GDP relies mostly on gross production volumes (e.g. numbers of passengers carried, students completing education, patients treated). Nonetheless, *value-added* (current price) weights for service components were provided by the *Banking and Currency Commission* (1938) and a government White Paper for 1935 and 1938 respectively.⁴⁷ Together, these two sources enable us to obtain considerable granularity in the individual sub-service sector weights, compared with the broad service categories listed in the first National Accounts (Table 2). The most recent revision of that 1947 GNP aggregate was made in the *National Income and Expenditure Tables* (1969), which presented nominal value-added (in IE£s) for the five major sectors of the economy: Agriculture (A), Industry (I), Transport, Distribution and Communication (TDC), Public Administration and Defence (PAD) and Professional and Personal Services (PPS). The largest component of TDC was "distribution" which is used interchangeably with "trade" throughout the text. The last three categories (TDC, PAD, PPS) are combined into a Services (S) sector.⁴⁸ It is these 1947 weights (Table 2) that serve as a starting point and they vary annually (1924-46) based on the (pre-1947) behaviour of each sectoral nominal (value-added) index.⁴⁹

⁴³ Broadberry et al., *British Economic Growth*; Krantz and Schön 'Swedish Historical'; Kenny et al., 'Annual Index'; Davis, 'Annual Index'.

⁴⁴ Broadberry et al., *British Economic Growth*; Krantz and Schön 'Swedish'

⁴⁵ Broadberry et al., *British Economic Growth*, p. XXXV; Bielenberg, *Ireland*.

⁴⁶ *Agricultural Statistics 1934-56, Censuses of Industrial Production* (various).

⁴⁷ *BCC; NIE 1938-44*.

⁴⁸ This coding is used in many Figures and Tables and refers to Appendix (1) codes.

⁴⁹ It was possible to construct GDP for 1947-70, by deducting net factor inflows from abroad (Appendix 2).

<<TABLE 2 HERE>>

As Table 2 shows, the share of value-added attributable to agriculture, industry and services was 30 per cent, 24 per cent and 46 per cent respectively in 1947. In order to calculate total GDP on a consistent annual basis before 1947, three indices are required for each sector: real (volume of) output in value-added (Q), nominal value-added (Y) and the GDP deflator (P). As the sectors in Table 2 are expressed in nominal value-added (1947 weights), it follows that we can achieve annual variation in sectoral weights prior to this if nominal value-added indices can be computed for the five sectors. As can be seen from equations 1-3, from two series, a third can be calculated.

$$\begin{aligned} 1) \quad Q &= \frac{Y}{P} \\ 2) \quad Y &= P * Q \\ 3) \quad P &= \frac{Y}{Q} \end{aligned}$$

For each sector, the order in which the three series (Q , Y , P) were computed was ranked based upon the data quality pertaining to each. While Appendix 1 takes the reader through a detailed construction of the sectors, Table 3 reports a generalised approach. Once two series were either “constructed” or “collected,” the remaining series was “calculated” from those.

<<TABLE 3 HERE>>

For example, for agriculture (A), it was straightforward to arrive at a nominal value-added index, by collecting the best existing official estimates (in £s). However, volumes were unavailable prior to 1934, necessitating the construction of a volume index from other primary sources. From there a deflator could be calculated for the period 1924-34. For industry (I) after 1926, nominal value-added was collected from most of the *Censuses*, along with volume (value-added) indices, from which deflators could be obtained.

Unfortunately, for the service (S) sectors (TDC, PAD, PPS), standardized official data were unavailable and each component relied on a number of judgement calls. For example, for transport, official primary source data were used to construct volume indices (passenger data), while a deflator could be calculated from collecting total passenger receipts and dividing by the number of passengers.⁵⁰ It was then possible to calculate a nominal index for a sector in transport. This shortcut method is less than ideal as it assumes that value-added moved in line with passenger receipt trends, ignoring inputs. Though the construction of the distribution (trade) sector follows the same approach to that taken by the *Banking and Currency Commission*, this method too is not without problems.⁵¹ It assumes that retail trade moves in line with the volume of imports, distributed manufactured goods and gross agricultural production “passing through its hands” (weighted by their respective current price values).

⁵⁰ This short description explains why the deflator for TDC is both “collected” (in terms of total receipts) and “calculated” (when divided by passengers).

⁵¹ BCC

For public administration (PAD), the government *Finance Accounts* were utilised for public expenditure on the various components of this category, which were employed as nominal indices for each sub-component. These series again, ignore intermediate inputs. Collecting quantities on the services provided (e.g. letters posted) under each heading in turn produced volume indices from which deflators could be derived. Similarly, for professional services, public expenditure data on say, healthcare served as nominal indices which could be then deflated by a reliable volume of service provided (e.g. patients treated). The volume and value of personal (entertainment) services production was assumed to equal their consumption⁵² for the period after 1938. As outlined in Appendix 1, consistent representative data for the personal services sector were particularly difficult to obtain. The series before 1938 tracks company growth in personal services, in combination with a proxy for entertainment. In this sense, that sub-sector of services must be considered the least robust.

When each series was completed, it was necessary to choose a method of combining 1) these sub-indices into composite sectoral indices and 2) those sectoral indices into the composite GDP index. Fortunately, this paper is not restricted by fixed year prices as annual sectoral nominal (value-added) indices were constructed. We can therefore discard the traditional Laspeyres (fixed-weight) index, as that would *not* account for any changing price structures over a given period.⁵³ The advantage with a chain-linked Laspeyres index is that it captures annual variation in nominal weights.⁵⁴ Consequently, each composite volume series (sectoral and aggregate) is produced using the Laspeyres chain-linked volume index, as is standard in national accounts today (Appendix 3).⁵⁵ Furthermore, this method provides a more accurate picture of aggregate volume growth rates than the alternatives⁵⁶, though it suffers, as with all chain-linked indices, from a lack of additivity.⁵⁷

III

Armed with the new series, we now consider sector and productivity growth during the period 1924-47. Figure 1 presents the headline GDP indices for Ireland over the period 1924-47.

<<FIGURE 1 HERE>>

This paper takes the official current price output of each sector in 1947 as the point of departure for establishing sectoral weights.⁵⁸ When all nominal indices are applied to those starting weights, it is possible to observe the changing composition of value-added for the full period (Figure 2).

<<FIGURE 2 HERE>>

⁵² FitzGerald et al., 'Household Behaviour'.

⁵³ Davis, 'Annual Index'.

⁵⁴ Davis (2004) was restricted to two benchmark years (1850 and 1880) for the period 1790-1915.

⁵⁵ OECD, *Understanding*; ONS, *Measuring*.

⁵⁶ OECD, *Understanding*, p. 61.

⁵⁷ In Appendix 3, an example is provided on how total Industry (I) was calculated using the Laspeyres chain-linked indexing method.

⁵⁸ NIE 1969

The sectoral shares of GDP do not differ substantially from the weights that would be derived from existing benchmarks.⁵⁹ The principal divergence from Duncan arises from official revisions in the 1944 Government White Paper.⁶⁰ The latter increased the size of the transport/distribution (TDC) sector by 60 per cent for the only overlapping year of the two sources: 1938. Subsequent *National Income and Expenditure Tables* followed that strategy and so the weights applied in this paper reflect these most “recent” revisions.⁶¹ Similarly, in the National Accounts, many government services are included under PPS (e.g education, healthcare) and TDC (e.g transport). This treatment explains why O’Hagan’s work shows higher shares of government in output in comparison to the National Accounts.⁶² In this sense, the risk of misattribution of employees and output between sub-sectors within services is high, and this motivates the construction of the composite Service (S) series for the productivity analysis below (Appendix 1, III).

We can combine the new sectoral series (volume and nominal) to examine the drivers of Ireland’s economic growth during the period. Figure 3 decomposes the contributions to growth over the years 1924-47.

<<FIGURE 3 HERE>>

Starting with the 1920s, one observes substantial contributions from agriculture, industry, and services. The early negative contribution from public administration originates from the demobilization after the Civil War (1922-3). The gradual establishment of political stability during the 1920s accommodated further defence reductions and others have documented the pruning of the civil service, cuts to pensions and social assistance that characterised the 1920s administration.⁶³ These confluent forces produced a negative contribution (PAD) for most of the 1920s. However, legislation such as the School Attendance Act (1926) substantially increased the numbers attending primary schools and the recovery of the financial sector aided in positive contributions from services (PPS). Industry too positively contributed to aggregate growth and supports Barry’s claim that the sector’s expansion has been “understated significantly” in studies commencing 1926.⁶⁴

What do the new data say about the Great Depression in Ireland? The primary driver of the contraction in output during the Great Depression was the agricultural sector and the beginning of the Economic War with Britain in 1932 only hampered subsequent recovery. The response to the Depression by the new administration in 1932 shows up as a significant positive contribution from public administration reflecting the increases in expenditure that arrived with the change of government.⁶⁵ This was aided both by the controversial decision to spend, rather than pass on to Britain, the land annuity

⁵⁹ BCC; Duncan, ‘Social Income’; Appendix 3.

⁶⁰ NIE 1938-44.

⁶¹ NIE 1969.

⁶² O’Hagan, ‘Analysis’; NIE 1969.

⁶³ Coakley, ‘Foundations’; Ó Gráda, ‘Political Economy’.

⁶⁴ Barry, *Industry*, p. 67.

⁶⁵ Daly, ‘Irish Free State’.

repayments made by Irish tenants to bondholders⁶⁶ and concurrent increases in taxation.⁶⁷ Overall, the data underpin the consensus to date that, by international standards, the effects of the depression in Ireland were mild, though the new data show 1932 as the nadir, instead of 1933.⁶⁸ Figure 4 contrasts Ireland's experience of the Depression with an appropriate peer group: peripheral economies that departed the Gold Standard in 1931 with significant trade links to Britain. Ireland's experience of the Great Depression is average, though the new Irish GDP series departs substantially from Maddison's.⁶⁹

<<FIGURE 4 HERE>>

It is unsurprising that trade (TDC) exerted a negative influence on growth through the remainder of the 1930s (Figure 3), given the 'economic war' with Britain and the rise of international protection. For instance, the average volume of exports during the trade war was less than half the normal quantity.⁷⁰ The inclusion of public and professional services in the new series reveal that a decisive recovery was under way by 1933, driven partly by an expansion in those sectors.

The narrative account of the 1930s is broadly reflected in the decomposition in Figure 3. In 1932, the *Fianna Fáil* administration promised a more active role for government in the economy, reflected by a large increase in public housing, industrial protectionism, a drive towards self-sufficiency and a shift towards labour intensive tillage. The latter policy reduced the pace of agricultural decline and agriculture's share in output was stabilized.⁷¹ Indeed, positive contributions were forthcoming from agriculture by the second half of the 1930s. In the sheltered industrial sector, up to 40,000 jobs may have been created over the period 1932-6.⁷² In the context of a global depression "low farm prices and a political imperative to reduce unemployment, this strategy had its logic",⁷³ though it affected productivity. Substantial and persistent contributions from industry continued until the international recession of 1937.

Anglo-Irish relations recovered somewhat in 1938 upon the signing of the Financial Agreement.⁷⁴ However, the impending 'Emergency' (1939-45) inflicted a shock upon the Irish economy, which it was ill-equipped to handle.⁷⁵ During the early stages (1939-42), the consumption of personal services (PPS) contracted substantially, as rationing was introduced.⁷⁶ The *share* of all sectors in GDP except agriculture and public administration decreased during the conflict. Even though World War II was not the boon the First World War had been to Irish farmers,⁷⁷ the first half of the conflict

⁶⁶ FitzGerald and Kenny, 'Century'; Fisher-Foley and McLaughlin 'Sovereign'.

⁶⁷ Daly, 'Irish Free State'.

⁶⁸ MPD 2020; Barry and Daly, 'Irish Perceptions'.

⁶⁹ MPD 2020.

⁷⁰ Kennedy et al., *Economic Development*, p. 45.

⁷¹ Neary and Ó Gráda, 'Protection'.

⁷² Devlin and Barry, 'Protection versus'.

⁷³ Ó Gráda and O'Rourke, 'Irish Economic Growth'.

⁷⁴ O'Rourke, 'Burn Everything'.

⁷⁵ Lee, *Ireland*, pp. 258-9.

⁷⁶ FitzGerald et al., 'Household'.

⁷⁷ Ó Gráda, *Rocky Road*, p. 17.

saw a rise in the volume of agricultural production, which contributed, positively to overall GDP growth. Farmers were the only section of Irish society that saw their standard of living *rise* during the first half of the emergency.⁷⁸ While defence expanded five-fold, it absorbed a relatively minor share of total public expenditure.

The negative economic effects of ‘the Emergency’ fell disproportionately on industry and trade, both of which were especially dependent upon inputs from, and conditions abroad. From its peak in 1939, industrial production had contracted by over 27 per cent in 1943, with construction alone falling 75 per cent from its 1938 peak.⁷⁹ These trends are reflected in substantial negative contributions in the years 1939-42. After 1943, growth rates reached heights unseen since the post-Civil War period. The share of professional and personal services began to expand, as the return of financial, healthcare, education and entertainment services began to play a larger role in aggregate growth. These sectors, as well as trade, were not included in earlier volume estimates of output and account for the slightly higher growth rates at the end of the War.⁸⁰ During the two post-war years in the sample, sectoral contributions to growth are the reverse of the ‘Emergency’ economy. As the wartime market disappeared, agricultural production fell, while the economy began to recover. Though the data support the claim that the recovery was predicated by trade⁸¹, strong responses from the other services were also key. The industrial contribution to growth was substantial, as it recovered access to international inputs.

How did the sectors perform relative to each other? We apply the starting point of 1926 and the terminal point of 1946 to avail of the employment data provided in the *Population Censuses* (1926, 1936, 1946).

<<TABLE 4 HERE>>

Table 4 reports that whether considering sectoral or labour productivity growth, the economy performed better in the first period. This is unsurprising given the magnitude of the contraction during ‘the Emergency’ years. Over the full period (1926-46), total labour productivity grew at an annual rate of 1.1 per cent. During the decade 1926-36, it grew at 1.8 per cent and was accompanied by meagre growth in the size of the labour force. This contrasts with weaker productivity growth of 0.4 per cent in the second period, despite a minor reduction in the numbers employed.

Ostensibly, the most noteworthy performance occurred in the industrial sector, which grew at almost 3 per cent per year and maintained annual labour productivity growth of 1.6 per cent. Perhaps more impressively, between 1926 and 1936, when the bulk of employment growth occurred, industrial labour productivity grew at 2.8 per cent per annum. However, this result does not warrant undue emphasis, as the employee numbers from the *Censuses of Population* are applied here to ensure consistency in source material across the three sectors. When one instead uses the equivalent from the

⁷⁸ O’Rourke, ‘Independent Ireland’.

⁷⁹ *CIP*, various.

⁸⁰ MPD 2020.

⁸¹ Ó Gráda and O’Rourke, ‘Irish Economic Growth’.

Censuses of Industrial Production, industrial productivity growth rates for the periods 1926-36, 1936-46 and 1926-46 fall to 0, 1.2 and 0.5 per cent respectively.⁸²

While total service output grew by 20 per cent over the period, the labour force employed in the service sector grew by almost 10 per cent and so labour productivity growth remained relatively weak at 0.5 per cent per annum. During the period 1936-46, employment in services grew at a similar rate to production, implying no labour productivity improvements. Despite experiencing weaker growth in total output than the service sector, agricultural labour productivity grew at 1 per cent per year, as numbers employed in the sector declined by 12 per cent. As GDP per capita grew at an almost identical rate to labour productivity (1924-46), when population and the labour force numbers remained effectively flat, the increase in living standards was achieved through productivity gains from workers moving from agriculture into higher value-added activities.

Figure 5 plots GDP per sector for the full period. The series for agriculture and services are considerably flatter, reflecting their respective annual growth rates of 0.2 per cent and 1.3 per cent. However, the average growth rate of agriculture is reduced dramatically by the post-war years, during which it contracted by almost 17 per cent (1945-7). If one chooses the period up to 1939, its annual growth rate approaches 1 per cent. The volume of industrial output grew at a considerably faster rate of approximately 3.6 per cent per annum over the period.

<<FIGURE 5 HERE>>

During the two distinctive crises of the period, the series do not behave in a similar manner in magnitude and duration, though the recoveries exhibit commonalities. Through the Great Depression, agriculture experienced the most substantial decline, at an earlier stage. The peak to trough contraction reached 5.6 per cent for agriculture (1929-31), 2.1 per cent for industry (1929-31) and 3.8 per cent for services (1931-2). By contrast, during the 'Emergency', agricultural production continued to expand by 12 per cent (1939-44) while industrial and service output experienced peak-to-trough contractions of 27 per cent (1939-43) and 4.6 per cent (1940-3) respectively.

In the next section, we will review the behaviour of the composite GDP series and compare it to available benchmarks.

IV

What does the new series say about Ireland's economic performance during the period and how does it align with existing benchmarks? Table 5 compares growth rates with available benchmarks for the period 1924-47.

<<TABLE 5 HERE>>

⁸² Employment numbers excluding local authority works, canals, railway and laundries/cleaning.

The new estimates suggest that the economy grew at under 1.5 per cent per year. In per capita terms, a 40 per cent increase in living standards was achieved over the period. Figure 5 shows that the period was composed of three distinctly expansive phases (1924-9, 1933-6 and 1945-7), a mild contraction during the Great Depression (1929-32) and a notable decline during ‘the Emergency’ (1940-3). The recoveries from the Emergency (1945-7) and the Civil War (1924-6) could be considered abnormal periods, as the economy returned to operating capacity. When both recoveries are removed, the economy grew at 0.8 per cent per annum. However, perhaps the ‘fairest’ peacetime interval to assess economic performance is the period 1926-38, during which the economy grew at 1.4 per cent per annum.

For the full period 1924-47, the new estimates of annual average growth of just under 1.5 per cent compare favourably to Maddison’s corresponding rate of 0.8 per cent.⁸³ The new series produces higher comparative growth rates across *all* subperiods that begin in 1924. While this is partly due to the lower starting point of 1924 adopted in this study, the result does not depend entirely upon this. If we choose 1926-47, a positive annual differential of 0.3 per cent persists and for that period, the growth rate of the new series (1.2 per cent) resembles the estimates of Kennedy et al of 1.3 and 1.1 per cent for the periods 1926-38 and 1938-50 respectively.⁸⁴ Indeed, during the least disruptive peacetime period (1926-38), Maddison’s annual growth estimates at 1.3 per cent are close to the new estimates (1.4 per cent).

The most recent estimates of annual GDP for any sub-period of this study were produced by Gerlach and Stuart, who developed an index commencing in 1933.⁸⁵ While their focus concerned money supply shocks, they provided nominal and real indices of GDP based on an earlier version of Maddison’s *per capita* estimates. They multiplied those numbers with adjusted estimates of annual population based upon the *Censuses*. The growth rates obtained from that study and the new series are broadly similar, though the two series diverge during the ‘Emergency’. The new estimates fall between the rates calculated from those authors and the White Paper, showing an annual average decline of about 0.3 per cent of GDP over the period 1938-44.⁸⁶

For all overlapping years of the two studies (1933-47), similar average annual growth rates are observable (1.2 and 1.4 per cent). Both papers show an identical annual average growth rate of 1.7 per cent over the period 1933-8 and taken together, the two suggest that Maddison’s equivalent rate of 0.7 per cent is too low for the same interval. This paper takes the argument one step further and argues that Maddison’s rate of 0.8 per cent is too low for the entire period (1924-47). As mentioned, Kennedy et al’s longer run estimates of 1.3 and 1.1 per cent for the respective periods 1926-38 and 1938-50 bolster this claim.

What are the sources of the divergence between the new series and Maddison’s and what are the implications? As we have seen, when both recoveries are removed with the Emergency, the two

⁸³ MPD 2020.

⁸⁴ Kennedy et al., *Economic Development*, pp. 118-9.

⁸⁵ Gerlach and Stuart, ‘Money’.

⁸⁶ Gerlach and Stuart, ‘Money’; NIE 1938-44.

series produce similar results. However, the slower growth rate for the whole period by Maddison must imply a higher initial level of GDP than is justified, according to this and Kennedy et al's account. Figure 6a compares total GDP across the two sources, taking 1947 as the point of departure. Figure 6b presents the underlying per capita series, where we assume that Maddison's estimates of *levels* are accurate from 1947 onwards.

<<FIGURE 6 HERE>>

Maddison has assumed no notable annual change in per capita GDP (panel b) between 1938 and 1944. The same is largely true for the period 1921-6. The emigration that occurred during the civil war period⁸⁷ therefore shows up as a minor GDP per capita *increase*. For both crisis periods, the only driver of total GDP (panel a) in the Maddison database is the change in total population. It is during those two periods that the new series and Maddison's exhibit the most substantial divergence, though the new estimates only commence from 1924. During the Great Depression (1929-32), the new series exhibits negative growth of just under 0.5 per annum while Maddison reports *positive* growth approaching 1 per cent per annum over that period, peaking as late as 1931. While the new series gives a more prominent role to the 1920s in terms of growth, it is *less* positive on the *late* 1920s than Duncan's⁸⁸ and Maddison's. This divergence is primarily due to the inclusion of items such as government and trade in the new series, both of which were in decline in the late 1920s.

More problematic is the period before 1924. In 1922, Ireland's economic woes were compounded by the UK depression, the end of the agricultural wartime boom and the destruction delivered by the Irish Civil War (1922-3).⁸⁹ The new estimates support Barry's claim that a rebound had already occurred by 1926⁹⁰ as the economy grew by 5.6 and 2.9 per cent in 1925 and 1926 respectively. But the question remains: from *what depth* was the Irish economy recovering? Regional GDP data suggest that Irish per capita GDP had fallen by more than 8 per cent between 1910 and 1925.⁹¹ How much of this was related to the Civil War (1922-3) contraction and the other economic shocks? Some have estimated the cost of the civil war at 30 per cent of 1926 national income.⁹² The conflict consumed three quarters of tax revenue, caused the fiscal deficit to quadruple and represented a major crisis.⁹³ It is difficult to argue like Maddison, that there was no change in the economy over the years 1921-4.

Table 6 starts by comparing the new estimates of Irish GDP per capita for 1924 with Maddison's. For that recovery year, the new estimates imply that GDP per capita was 14 per cent lower than Maddison.⁹⁴ By 1926, this shortfall was reduced to 6 per cent, given the rebound of 1925-26.

⁸⁷ Bielenberg, 'Exodus'.

⁸⁸ Duncan, 'Social Income'.

⁸⁹ Barry, *Industry*, p. 67.

⁹⁰ Barry, *Industry*, p. 67.

⁹¹ RWD 2020.

⁹² Figure calculated from Patrick Hogan in *Dáil Debates*, (19/09/1923). "It cost us £50,000,000 to put them [anti-treaty forces] in [prison], it cost us the lives of many gallant men [government forces] to put them in, and it cost us the life of Michael Collins." See McLaughlin, 'Economic Cost'.

⁹³ FitzGerald and Kenny, 'Till Debt'.

⁹⁴ MPD 2020

<<TABLE 6 HERE>>

We cannot measure growth in 1924, as it is the first year of the new index. We also lack GDP for the Civil War (1922-3). However, real GDP estimates for a number of other major shocks that hit the Irish economy are available. What type of (Civil War) shock would it take to reach Maddison's GDP per capita estimate for 1921?

Table 6 includes the results of a highly speculative simulation of a range of Irish GDP per capita levels for 1921, depending on the severity of the Civil War. It does so by imposing three historical shocks to the Irish economy for the years 1922-4; the Famine, the Great Financial Crisis and the 'Emergency'. We retain the population for the period 1921-4 but impose the same shocks to aggregate GDP that occurred in each instance. Essentially, we use the first three years of each major crisis and splice them back from 1924 to arrive at a range of levels of GDP per capita in 1921. The more severe the shock, the higher the initial (1921) level of GDP per capita. For example, making the heroic assumption that the economy behaved in an identical manner to the Famine years (1846-8) over the period 1922-4 will push GDP per capita in 1921 to 94 per cent of Maddison's estimate.⁹⁵ Imposing the shocks of the 'Emergency' and the Great Financial Crisis places it at 90 and 92 per cent respectively of Maddison's level. While this exercise is an entirely speculative one, it suggests that Maddison's per capita GDP estimate for 1921 is too high. The alternative scenario -that the economic cost of the Civil War was more severe than the Famine- is less tenable. However, without sufficient production data, GDP estimates for 1921 cannot be obtained and it must remain an open question.

The result that Ireland was poorer than previously thought is not new and joins a question addressed recently in this journal.⁹⁶ Joseph Lee's classic work posited that Ireland had been comparatively rich in 1910, though the benchmark data he utilised included Northern Ireland.⁹⁷ Based upon contemporary studies, he suggested that GDP per capita levels between north and south should be similar in 1910 and in 1921 and noted that Ireland's GDP per capita was approaching two thirds of the UK equivalent by 1926. Since then, quantitative studies have emerged that weakened the validity of these assumptions. Geary and Stark's papers place Irish GDP per capita at about 52 and 56 per cent of the UK equivalent for 1911 and 1931 respectively.⁹⁸ For 1925, the databases of Rosés and Wolf and even Maddison put Irish GDP per capita at 47 and 50 per cent of the UK level respectively.⁹⁹ Irish GDP per head was 78 per cent of Northern Ireland's for the same year.¹⁰⁰ Taken together, the recent literature has found that at independence, Ireland was poorer than previously supposed, when compared with the UK, Northern Ireland and European peers.

⁹⁵ The effect of the Famine simulation is muted due to an abnormal temporary recovery in the third year.

⁹⁶ Ó Gráda and O'Rourke, 'The Irish economy';

⁹⁷ Lee, *Ireland*, pp. 513-4.

⁹⁸ Geary and Stark, 'Regional GDP'; idem '150 Years'.

⁹⁹ RWD 2020; MPD 2020.

¹⁰⁰ RWD 2020.

V

In this section, we consider Ireland’s economic performance against its relevant peer group (1924-47) and finish by briefly comparing the growth record of the decades since independence.

As outlined, the new estimates produce a slightly lower *level* estimate of GDP per capita (-6 per cent) for Ireland at the traditional starting point, 1926. Using Maddison’s 1947 estimate, we roll back the new GDP series, account for population change and arrive at new GDP per capita estimates for 1924 and 1926 from which to calculate growth rates in the interwar period. The adjustments are not sufficient to alter Ireland’s rank among European peers. Table 7 places Ireland closer to Finland, while increasing the distance from its next richest peer, Czechoslovakia.

<<TABLE 7 HERE>>

O’Rourke claimed that using the UK as a reference benchmark represents an “important mistake” as that economy performed relatively poorly over the twentieth century.¹⁰¹ Two options are therefore available. The first is to contrast Ireland’s growth with other European peers. The second is to treat independent Ireland as a *de facto* economic region of the UK until EEC membership in 1973. The latter option has been facilitated in recent years by the development of regional GDP statistics.¹⁰²

An international comparison is provided in Figure 7, which places Ireland’s interwar growth in the context of its European peer group using the new GDP series (1926-38). In order to capture the growth rates from the earliest years of independence, the 1924-38 figure is also included for Ireland with the equivalent for the UK.¹⁰³

<FIGURE 7 HERE>

Ireland’s performance does not appear unique, using adjustments from the new series on Maddison’s dataset.¹⁰⁴ While its performance lies just below the convergence line over the period 1926-38, it crosses slightly above it when encompassing 1924-38. Of the two distinctive groups that emerge from Figure 7, the Nordic countries, Germany and UK all experience comparatively higher rates of growth relative to others, who started from similar income levels. For the other group, comprising the majority of European regions with GDP data, Ireland lies above where it “should” be. Ireland’s growth deficit against countries of similar initial income levels such as Finland and Norway may lie in its limitations as a region of a larger sluggish UK economy, though this question remains an open one. Indeed, taking 1924 as a starting point, Ireland grew faster than the UK. However, much of this difference lies in the transitory growth rates Ireland experienced in the aftermath of the Civil War.

¹⁰¹ O’Rourke, ‘Independent Ireland’.

¹⁰² Geary and Stark, ‘Regional GDP; idem ‘150 Years’; RWD 2020.

¹⁰³ For robustness, the same exercise was conducted on all sample countries starting at 1924 initial Income and Ireland’s growth rate remains above the 1924-38 line.

¹⁰⁴ O’Rourke, ‘Independent Ireland’. MPD 2020.

When considering Ireland in terms of other comparable UK regions, we can benefit from the work of Rosés and Wolf (2020) who have collaborated with a range of authors to produce the first extensive historical GDP database for Europe's sub-national regions. The first benchmark year for independent Ireland in that database was for 1925 and the underlying estimates were derived from the pioneering efforts of Geary and Stark.¹⁰⁵ Those authors regretted that due to a lack of data and wage estimates in 1921, their more reliable point estimate of 1911 would have to serve as a basis for interpolation with the next available benchmark in independent Ireland. However, as this paper has produced an independent annual estimate for 1925 for Ireland, we can revisit the UK regional story in a fresh light.

Table 8 reports that all other UK regions had higher GDP per person than Ireland in 1925. According to the Rosés and Wolf database, GDP per capita for the entire UK in 1925 was approximately double the Irish level, with some variation. While this ratio held for England and Scotland, per capita GDP in Northern Ireland and Wales were at least 50 per cent higher than Ireland's. Comparative growth rates are calculated for Ireland against regions of the UK for the same benchmark intervals prescribed by Rosés and Wolf.¹⁰⁶ We move back from Rosés and Wolf's 1950 level of real GDP using the new volume series to arrive at an adjusted 1925 level of GDP per capita.¹⁰⁷ Using the new starting level shows Ireland's post-independence economic performance in a better light than the Rosés and Wolf database.¹⁰⁸

<TABLE 8 HERE>

Aggregate Irish growth rates for the pre-WW2 period approach those recorded in Scotland and Wales and outperform the Northern Irish economy. Recent work on the latter's poor productivity growth over the period suggests that regional institutions created barriers to productivity growth.¹⁰⁹ However, Northern Ireland recovered in the second period and its economy expanded at a rate of 2.7 per cent per annum, against Ireland's 1.6 per cent.

When considering Irish per capita growth, one must begin with the caveat that between 1926 and 1946 the Irish population continued its historical decline, falling by 0.6 per cent between those two Censuses.¹¹⁰ Over the full period, it outperformed all regions in line with expectation, given its significantly lower initial (1925) income level. Figure 8 shows that convergence was occurring during the full period (1925-50) at a higher rate (1.8 per cent) than previously believed (1.4 per cent).

<FIGURE 8 HERE>

¹⁰⁵ Geary and Stark, 'Regional GDP; idem '150 Years'.

¹⁰⁶ RWD 2020.

¹⁰⁷ RWD 2020.

¹⁰⁸ RWD 2020.

¹⁰⁹ Jordan, 'Failing'.

¹¹⁰ *Censuses of Population* (1926, 1946).

We now consider the Irish growth record over the century since political independence (Table 9). While GDP is probably a better measure of domestic activity until 1970 because of inward remittances temporarily inflating GNP, after that point the reverse is true as *outward* international flows permanently inflate GDP. After 1995, the globalized nature of the Irish economy implies that domestic activity is more accurately measured using GNI*, which strips out many features that do not relate to domestic value-added.¹¹¹ In this vein, the GNI* hybrid index attempts to achieve consistency in comparison across periods splicing real GDP (1924-70), real GNP (1970-1995) and GNI* (1995-2022) together.¹¹²

<<TABLE 9 HERE>>

The numbers reported in Table 9 likely flatter the 1920s and downplay the achievements of the 1930s. While we do not have data for all of the 1920s, one can assume that the average growth rate would fall substantially with the inclusion of 1920-3. Though the recovery was under way by 1924, it is likely that the contraction experienced over the years 1920-3 was substantial. In contrast, the 1930s are affected by both the inclusion of the Depression and the first year of the Emergency, which both tend to understate the performance of that decade. For example, when one takes the period 1932-8, the economy grew at an annual rate of 1.9 per cent. Given the international economic dislocations of the 1930s, as well as the ongoing trade war with Britain, such growth compares favourably to the 1.5 per cent per annum observed during the 1950s. Elsewhere in Europe, that period was the beginning of a “Golden Age”.¹¹³

Perhaps somewhat remarkably, the internationally turbulent decades of the 1920s, 1930s and 1940s produced superior growth rates than the 1950s (when accounting for the international conditions affecting both eras) and the 1980s. In this respect too, the new data do not challenge Ó Gráda and O’Rourke’s view that the 1950s and 1980s were the worst decades in independent Ireland’s economic history.¹¹⁴ While the decade spanning 2000-9 fell only slightly short of the 1950s in terms of annual growth rates, Ireland experienced the most severe financial crisis on record in 2008-10 since 1820.¹¹⁵

VI

This paper constructs original annual GDP estimates for Ireland over the period 1924-47, built up from over eighty underlying production indices. The new series is deployed to evaluate Ireland’s economic performance afresh over the decades following independence. The new data in turn are linked to the

¹¹¹ See Appendix 2 for discussion.

¹¹² The online excel appendix provides data for GDP, GNP and GNI*(hybrid) for the full period (1924-2022) in constant and current prices.

¹¹³ Ó Gráda and O’Rourke, ‘Irish Economic Growth’.

¹¹⁴ Ó Gráda and O’Rourke, ‘The Irish Economy’.

¹¹⁵ Kenny and Turner, ‘Wildcat’.

first complete set of official national accounts (1947), providing economists and future researchers with a century of unbroken annual GDP data for Ireland (Appendix 2).

The first decades of independence were plagued by substantial shocks such as the Civil War, the Great Depression, the Trade War with Britain and the ‘Emergency’. Over the period 1924-47, the Irish economy grew at an annual rate of just under 1.5 per cent. As the new series begins in 1924, the post-Civil war recovery is captured and a slightly more optimistic picture emerges than traditional benchmarks have conveyed.¹¹⁶ Nonetheless, though the new estimates do not challenge existing narratives on Irish economic performance, they provide a more solid empirical underpinning of those theories than previously available. Given the similarities between the growth rates obtained from this series and benchmarks¹¹⁷, it is argued that Maddison’s estimates of levels of per capita GDP for Ireland are too high for 1924/26.¹¹⁸ When the difference between Maddison and the new estimates are examined, we find that the divergence emanates from the three crisis/recovery periods where Maddison assumes no material change in output. This finding places this work amongst a growing volume of literature¹¹⁹ that finds that Ireland was poorer at independence than surmised by Lee¹²⁰ and that it must have consequently, grown more rapidly in subsequent years.

Three expansionary phases emerge from the data- 1924-26, 1932-6 and 1945-7. However, all three of these intervals represent, to varying degrees, recoveries from the three severe shocks of the period- the Irish Civil war (1922-3), the Great Depression (1929-32) and the Emergency (1939-45). The new data conform to the existing narratives that the Great Depression was mild¹²¹ and agree that the effects of the Emergency were severely felt.¹²² However, they also lend support to new hypotheses such as Barry’s, by presenting the 1920s in a more favourable light when the post-civil war recovery is included.¹²³

By incorporating the service sector, the new series sheds light on features of the Irish economy that had previously remained unquantified. In particular, the expansion of services throughout the 1920s aided growth to a greater extent than Duncan suggested.¹²⁴ However, from the late 1920s, the story of trade in the Irish economy is one of persistent decline and it continued to exert a negative drag on growth until after the ‘Emergency’. Conversely, public administration and other services contributed significantly to the post-depression recovery. Likewise, the role of expanded and sheltered industry in delivering growth is evident in the new series through the 1930s.¹²⁵ While the service sector and industry

¹¹⁶ Duncan, ‘Social Income’.

¹¹⁷ Kennedy et al., *Economic Development*, pp. 118-9; Gerlach and Stuart, ‘Money’.

¹¹⁸ MPD 2020.

¹¹⁹ Geary and Stark, ‘Regional GDP; idem ‘150 Years’; RWD 2020.

¹²⁰ Lee, *Ireland*

¹²¹ Barry and Daly, ‘Irish Perceptions’.

¹²² Ó Gráda, ‘Five crises’.

¹²³ Barry, *Industry*, p. 67.

¹²⁴ Duncan, ‘Social Income’.

¹²⁵ Neary and Ó Gráda, ‘Protection’.

suffered acutely at the beginning of the ‘Emergency’ in contrast to agriculture, this situation was largely reversed from 1944.

Of the sectors, industry expanded at the fastest rate at 3.6 per cent per year, while the equivalent number for the service sector was 1.3 per cent. Industry’s contribution to GDP growth over the interwar period remained persistently positive with the notable exception of the early Emergency (1939-43) and the 1937 international recession. The volume of agricultural output grew by almost 1 per cent per annum up to 1939, though over the full period, it remained largely unchanged. However, as the number of agricultural employees fell by almost 13 per cent, labour productivity grew at 1 per cent per annum. The 40 per cent improvement in GDP per head over the period was a result of productivity gains from workers shifting to more productive activities.

The new data underpin O’Rourke’s view that Ireland’s performance was not unique over the period. While the earlier starting point (1924 instead of 1926) modestly improves its growth rate relative to European peers, the new series shows that Ireland converged more rapidly within the UK than previous studies have suggested during the interwar period.¹²⁶

In recent years, an increasingly sympathetic view of policy making in the early decades of independence has emerged. These contrast with Kennedy et al’s critique that “Ireland’s response since independence to its internal and external environment has been far from effective”.¹²⁷ There is validity to the view that policy makers had delayed both its protectionist and liberalisation periods, relative to its peers, potentially depriving the economy of initial advantages that may otherwise have been available.¹²⁸ Possibly, these inadequate responses were steered by the skewed priorities of security, sovereignty and survival, as mentioned at the outset.

However, the interwar period was a notoriously turbulent one. As Ireland remained a de facto unit of the sluggish UK economy,¹²⁹ perhaps its policies and interwar growth record have been harshly judged? It was converging from its lower income level during the interwar period within the UK. Despite the political bitterness and damage caused by the Civil War (1922-3), Ireland managed to avoid the economic and political instability associated with many contemporary emerging nation states. This paper suggests that when looking back at periods of Irish economic stagnation and policy errors over the twentieth century, one might begin at the 1950s or 1980s rather than the 1920s, 1930s or 1940s.

¹²⁶ RWD-2020.

¹²⁷ Kennedy et al., *Economic Development*, p. 257.

¹²⁸ Ó Gráda and O’Rourke, ‘Irish Economic Growth’.

¹²⁹ O’Rourke, ‘Independent’.

References

Primary Sources

- Agricultural Statistics, 1927-33. (1935) SO, P.1577*
- Agricultural Statistics 1934-56 (1960) SO. P.4335*
- Banking and Currency Commission Report (1938, P.441). BCC*
- Statistical Abstracts (1931-51) (annual)*
- Censuses of Industrial production/CIPI (1926, 1929, 1931, 1932-5, 1936-48)*
- Census of Distribution (1933) Official Publications*
- Dáil debates, 36 col. 66, 19 November 1930*
- Irish Trade Journal (1924-49) (quarterly)*
- Journal of the Institution of Bankers in Ireland.*
- Trade and Shipping Statistics: Official Publications*
- National Income and Expenditure, 1938-44. SO, P. 7356 (NIE 1938-44)*
- National Income and Expenditure, 1944-50 SO, P. 350 (NIE 1944-50)*
- Census of Northern Ireland and Census of Ireland, 1926*
- Irish Statistical Bulletin (1956); (ISB 1956)*
- Journal of the Institute of Bankers of Ireland (JIBI, various issues).*
- National Income and Expenditure Tables (NIE, Various Years).*
- Statistical Abstract (SA, Various Years).*

Secondary Sources

- Andersson, F.N.G. and Lennard, J. (2019), 'Irish GDP between the Famine and the First World War: estimates based on a dynamic factor model, *European Review of Economic History*, Volume 23, Issue 1, Pages 50–71
- Barry, F. (2023), *Industry and Policy in Independent Ireland, 1922-1972*, Oxford: Oxford University Press, 2023 (forthcoming).
- Barry, F. (2018), 'The Leading Manufacturing Firms in 1920s' Dublin, *Dublin Historical Record* 71 (1), 7-15
- Barry, F. (2014), 'Diversifying external linkages: the exercise of Irish sovereignty in long-term perspective', *Oxford Review of Economic Policy*, Volume 30, Number 2, 2014, pp. 208–222
- Barry, F. and Daly, M. E. (2011), 'Irish perceptions of the Great Depression', *Institute for International Integration Studies* discussion paper no. 349.
- Drea, E., & Barry, F. (2021). A reappraisal of Joseph Brennan and the achievements of Irish banking and currency policy 1922–1943. *Financial History Review*, 28(1), 45-66.
- Bielenberg, A. (2013) 'Exodus: The Emigration of Southern Irish Protestants During the Irish War of Independence and the Civil War', *Past & Present*, Volume 218, Issue 1, February 2013, Pages 199–233.

- Bielenberg, A. (2009), *Ireland and the industrial revolution: the impact of the industrial revolution on Irish industry, 1801–1922*.
- Bielenberg, A. and Ryan, R. (2013), *An Economic History of Ireland since Independence* (London: Routledge).
- Bielenberg, A. and O'Mahony, P. (1998), 'An expenditure estimate of Irish national income in 1907', *The Economic and Social Review*, Vol. 29 (2) pp. 107-132.
- Bolt, J. and van Zanden, J.L. (2014), The Maddison Project. *The Economic History Review*, 67: 627-651. <https://doi.org/10.1111/1468-0289.12032>
- Broadberry, S. and Klein, A. (2012), 'Aggregate and per capita GDP in Europe, 1870–2000: continental, regional and national data with changing boundaries.' *Scandinavian Economic History Review*, 60 (1). pp. 79-107. ISSN 0358-5522
- Broadberry, S. N., Campbell, B. M. S., Klein, A., Overton, M., and van Leeuwen, B. (2015), *British economic growth, 1270-1870*, Cambridge: Cambridge University Press.
- Coakley, J. (2018), 'The Foundations of Statehood' in *Politics in the Republic of Ireland*, Routledge: London. 6 ed.
- Colbert, J.P. (1931) 'The Free State currency problem'. *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. XV No. 2, 1931/1932, pp11-19
- Coyle, D. (2014), *GDP: A Brief but Affectionate History*. Princeton University Press.
- Crafts, N. (2018), *Forging Ahead, Falling Behind and Fighting Back. British Economic Growth from the Industrial Revolution to the Financial Crisis*. Cambridge University Press.
- Crafts, N. (2014). 'Walking wounded: the British economy in the aftermath of World War I.' VOX: CEPR Policy Portal. Google Scholar
- Crafts, N. F. R., & Harley, C. K. (1992). Output Growth and the British Industrial Revolution: A Restatement of the Crafts-Harley View. *The Economic History Review*, 45(4), 703–730.
- Crotty, R. (1966), *Irish Agricultural Production: its volume and structure*, Cork University Press.
- Cummins, N. and Ó Gráda, C. (2021). "On the Structure of Wealth-Holding in Pre-Famine Ireland," *Irish Economic and Social History*, 48(1): 108-134
- Daly, M. E. (2011). The Irish Free State and the great depression of the 1930s: the interaction of the global and the local. *Irish Economic and Social History*, 37, pp. 19–35.
- Daly, M. E. (2006). *The slow failure: population decline and independent Ireland, 1920–1973*: University of Wisconsin Pres
- Daly, M. E. (1992). *Industrial Development and Irish National Identity, 1922-1939*: Syracuse University Press
- Daly, P. and Morgan, M. (2023), 'The Great Capital Migration: The Transformation of Wealth in the Republic of Ireland' UNIGE Working Paper (forthcoming), presented at the Irish Quantitative History Meeting, 20 January 2023.

- Daniel, T. K. (1976). 'Griffith on his noble head: the determinants of Cumann na nGaedheal economic policy, 1922-32', *Irish Economic and Social History*, 3: 55-65.
- Davis, J. H. (2004), 'An annual index of U.S. industrial production, 1790-1915', *Quarterly Journal of Economics*, 119 (2004), pp. 1177-215.
- Deane, P. and Cole, W. A. (1962), *British economic growth, 1688-1959*: Cambridge.
- Devlin A. and Barry F. (2019), 'Protection Versus Free Trade in the Free State Era: The Finance Attitude,' *Irish Economic and Social History*. 46(1): pp. 3-21.
- Duncan, G. A. (1940) 'The social income of the Irish Free State, 1926-38'. - Dublin: Journal of the Statistical and Social Inquiry Society of Ireland, Vol. XVI No. 3, 1939/1940, pp1-16
- Eichengreen, B., & Sachs, J. (1985). 'Exchange Rates and Economic Recovery in the 1930s.' *The Journal of Economic History*, 45(4), 925-946.
- Enflo, K. and Missiaia, A. (2019), 'Regional GDP before GDP: A methodological survey of historical regional accounts' in *Regional Economic Development and History* (edited by Molema, M. and Svensson, S.), pp. 82-97. Routledge. 1st Edition.
- Fanning, R. (1978), *The Irish Department of Finance 1922-58*, Institute of Public Administration, Dublin.
- Feinstein, C. H. (1972), *National income, output and expenditure of the United Kingdom 1855-1965* Cambridge: Cambridge University Press.
- Fitzgerald, J. and Honohan, P. (2023), *Europe and the Transformation of the Irish Economy*. Cambridge University Press.
- Fitzgerald, J., Kenny, S., & Cermeño, A. (2022). 'Household Behaviour under Rationing'. *National Institute Economic Review*, 1-21. doi:10.1017/nie.2022.19
- FitzGerald, J. (2020). 'National Accounts for a Global Economy: The Case of Ireland', in Nadim Ahmad, Brent Moulton, J. David Richardson and Peter van de Ven, (Eds.). *The Challenges of Globalization in the Measurement of National Accounts*. University of Chicago Press.
- FitzGerald, J. and Kenny, S. (2020), "Till debt do us part": financial implications of the divorce of the Irish Free State from the United Kingdom, 1922–1926, *European Review of Economic History*, Volume 24, Issue 4, November 2020, pp. 818–842
- FitzGerald, J. and Kenny, S. (2019), 'Managing a Century of Debt'. *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol.48, 2018-19, pp1-40.
- Foley-Fisher, N. and McLaughlin, E. (2016), 'Sovereign Debt Guarantees and Default: Lessons from the UK and Ireland, 1920-1938', *European Economic Review*, Vol. 87, pp. 272-86.
- Geary, F. and Stark, T. (2019). '150 Years of Regional GDP: United Kingdom and Ireland' in *The Economic Development of Europe's Regions: A Quantitative History since 1900*, (eds) Rosés, J.R. and Wolf, N. Routledge: London.
- Geary, F. and Stark, T. (2015). Regional GDP in the UK, 1861–1911: new estimates. *Economic History Review* 68(1), pp. 123–44.

- Geary, F. and Stark, T. (2002). Examining Ireland's post-Famine economic growth performance. *Economic Journal* 112(482), pp. 919–35.
- Gerlach S and Stuart R. (2015) Money, Interest Rates and Prices in Ireland, 1933–2012. *Irish Economic and Social History*. 2015;42(1):1-3
- Grossman, R.S., Lyons, R.C., O'Rourke, K.H. and Ursu, M.A. (2014). 'A monthly stock exchange index for Ireland, 1864–1930'. *European Review of Economic History* 18(3), pp. 248–76.
- Hickson, C. R. and Turner, J. D. (2005), 'The rise and decline of the Irish stock market, 1865–1913', *European Review of Economic History*, 9, pp. 3–33
- Hickson, C. R. and Turner, J. D. (2008), 'Pre- and post-Famine indices of Irish equity prices', *European Review of Economic History*, 12, pp. 3–38
- Honohan, P. and Ó Gráda, C 1998. The Irish Macroeconomic Crisis of 1955-56: How Much Was Due to Monetary Policy?" *Irish Economic and Social History*, Vol. 25, pp. 52-80
- Honohan, P. and Walsh, B. (2002), 'Catching Up with the Leaders: The Irish Hare', *Brookings Papers on Economic Activity*, vol. 33, issue 1, 1-78
- Hughes, G. (1975). "The Functional Distribution of Income in Ireland 1938–1970." *Economic and Social Research Institute*, General Research Series No. GRS65, ESRI, Dublin, 1975.
- Jordan, D. (2023), 'Failing to Level Up? Industrial Policy and Productivity Performance in interwar Northern Ireland.' Queen's University Centre for Economic History: QUCEH Working Paper Series WP 23-04, January 2023.
- Kennedy, K.A., Giblin, T. and McHugh, D. (1988), *The Economic Development of Ireland in the Twentieth Century*. Routledge: London.
- Kenny, S. and Lennard, J. (2018), 'Monetary aggregates for Ireland, 1840–1921'. *The Economic History Review*, 71: 1249-1269.
- Kenny, S., Lennard, J., and O'Rourke, K. H., 'An annual index of Irish industrial production, 1800–1913', *Economic History Review*, 76 (2023), pp. 283– 304.
- Kenny, S. and McLaughlin, E. (2022), 'The Political Economy of Secession: Lessons from the Early Years of the Irish Free State,' *National Institute Economic Review* 261:48-78.
- Kenny, S., Lennard, J., Turner, J.D. (2021), 'The macroeconomic effects of banking crises: Evidence from the United Kingdom, 1750–1938', *Explorations in Economic History*, 79, art. no. 101357.
- Kenny, S. and Turner, J.D. (2020), 'Wildcat bankers or political failure? The Irish financial pantomime, 1797–1826', *European Review of Economic History*, Volume 24, Issue 3, pp. 522–577
- Kiernan, T. J. (1933a), 'The National Income of the Population of the Irish Free State in 1926, *The Economic Journal*, Volume 43, Issue 169, 1 March 1933, Pages 74–87
- Kiernan, T. J. (1933b) 'The national expenditure of the Irish Free State in 1926'. - Dublin: *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. XV part 3, 1932/1933, pp91-103
- Lee, J. J. (1989), *Ireland 1912–1985: politics and society* (Cambridge)

- Linehan, T. P. (1998), 'The development of official Irish statistics'. - *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. XXVII, Part V, 1997/1998, pp. 47-98.
- Maddison Project Database (2020). Bolt, Jutta and Jan Luiten van Zanden, "Maddison style estimates of the evolution of the world economy. A new 2020 update [MPD 2020]"
- McCarthy, M.D. (1952), 'Symposium of National Income and Social Accounts' *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. XXVIII, Part V, 1951/1952, pp473-514
- McGrath, L., Hynes, S., McHale, J. (2021), 'Reassessing Ireland's economic development through the lens of sustainable development,' *European Review of Economic History*, heab025, <https://doi.org/10.1093/ereh/heab025>
- McLaughlin, E., & Sharp, P. (2021). Competition between organisational forms in Danish and Irish dairying around the turn of the twentieth century. *Business History*, 63(2), 314-341.
- McLaughlin E. (2015) Writing the Economic History of Ireland since Independence. *Irish Economic and Social History*; 42(1):76-92
- McLaughlin E. (2015b) Economic Impact of the Irish Revolution. *No 2015-13, Discussion Papers in Environment and Development Economics from University of St. Andrews, School of Geography and Sustainable Development*
- McLaughlin, E. (2014) 'Profligacy in the encouragement of thrift': Savings banks in Ireland, 1817–1914, *Business History*, 56:4, 569-591, DOI: 10.1080/00076791.2013.837887
- Meenan, J. (1970). *The Irish Economy since 1922*. Liverpool: Liverpool University Press
- Moynihán, M. (1975), *Currency and Central Banking in Ireland 1922–60*. Dublin: Central Bank of Ireland and Gill & Macmillan
- Neary, J.P. and Ó Gráda, C. (1991) "Protection, economic war and structural change: the 1930s in Ireland," *Irish Historical Studies* 27, 250-266. for at least half of the War period.
- O'Connor R. and Guiomard C. (1985), 'Agricultural Output in the Irish Free State Area before and after Independence'. *Irish Economic and Social History*. 12(1):89-97.
- OECD (2014), *Understanding National Accounts* (2 ed.), Lequiller F. and Blades D. OECD Publishing.
- Ó Gráda, C., (2011), 'Five Crises.' Central Bank of Ireland T.K. Whitaker Lecture, Presented at the Central Bank of Ireland, Dublin, Ireland.
- Ó Gráda, C. (2000). The political economy of the old age pension: Ireland c. 1908-1940. UCD Centre for Economic Research Working Paper Series; WP00/22
- Ó Gráda, C.. (1997). *A Rocky Road: The Irish Economy since the 1920s*. Manchester: Manchester University Press. Google Scholar
- Ó Gráda, C. (1995). 'Money and banking in the Irish Free State'. In Feinstein, C. H. (ed.), *Banking, Currency and Finance in Europe between the Wars*. Oxford: Clarendon Press. Google Scholar
- Ó Gráda, C. (1994). *Ireland: A New Economic History 1780–1939*. Oxford: Clarendon Press.
- Ó Gráda, C. and O'Rourke, K. H., 'The Irish economy during the century after partition', *Economic History Review*, 00 (2021), pp. 1– 35. <https://doi.org/10.1111/ehr.13106>

- Ó Gráda, C. and O'Rourke, K. (1996). 'Irish economic growth, 1945–88'. In N. Crafts and G. Toniolo (eds), *Economic Growth in Europe since 1945*. Cambridge: Cambridge University Press, pp. 388–426.
- O'Hagan, J.W. (1980), 'An analysis of the Relative size of the Government sector: Ireland 1926-52', *The economic and social review*, vol 12, no, 1.
- ONS (2023), *Measuring the Economy*, eds Jonathan Athow and Joe Grice. Office For National Statistics Publications- UK.
- O'Rourke, K.H. (2017). "Independent Ireland in Comparative Perspective." *Irish Economic and Social History*, vol. 44, no. 1, pp. 19–45
- O'Rourke, K. H. (1998), 'Monetary data and proxy GDP estimates: Ireland 1840–1921', *Irish Economic and Social History*, 25, pp. 22–51
- O'Rourke, K. H. (1991), 'Burn Everything British but Their Coal: The Anglo-Irish Economic War of the 1930s.' *The Journal of Economic History* 51, no. 2 (1991): 357–66
- Rosés, J.R. and Wolf, N (2020), *Rosés-Wolf Database on Regional GDP, v6 (2020)*. **[RWD 2020]**
- Rosés, J.R. and Wolf, N. eds (2019), *The Economic Development of Europe's Regions: A Quantitative History since 1900*. Routledge: London.
- Schön, L., & Krantz, O. (2015). New Swedish Historical National Accounts since the 16th Century in Constant and Current Prices. (Lund Papers in Economic History. General Issues; No. 140). Department of Economic History, Lund University.
- Stuart, R. (2019), UK shocks and Irish business cycles, 1922–79. *The Economic History Review*, 72: 618-640.
- Stuart, R. (2017), '70 years of personal disposable income and consumption in Ireland', *Journal of the Statistical and Social Inquiry Society of Ireland*; Vol. XLVI, 2016-17, pp.47-70.
- Thomas, R and Dimsdale, N (2017) "A Millennium of UK Data", Bank of England OBRA dataset, <http://www.bankofengland.co.uk/research/Pages/onebank/threecenturies.aspx>
- Turner, M. (1996), *After the Famine: Irish agriculture, 1850–1914*, Cambridge Press.

Table 1: Methods of Calculating Gross Domestic Product

Approach	Description	Formula
Output (Production)	Agriculture (va) + Industry (va) + Services (va)	$Y = Y_{ag} + Y_{ind} + Y_{ser}$
Expenditure	Consumption + Investment + Government Expenditure + Net Exports	$Y = C + I + G + (X - M)$
Income	[daily wage rates*days worked] + [rent*land area] + [return on capital*capital stock]	$Y = Y_{lab} + Y_{land} + Y_{cap}$

Note: "va" is value-added. "Lab", "Land" and "Cap" refer to labour, land and capital respectively.

Table 2: Gross National Product at Market Prices, 1947

	GNP (market prices)	(1) Agric.	(2) Ind	(3) Transport, Distribtn., Commun.	(4) Public Admin.	(5) Domestic Services	Services (3+4+5)
<i>Value (Irish £ millions)</i>	332	82	64	52	16	58	127
<i>Share</i>	-	30%	24%	19%	6%	21%	46%
<i>Appendix I code</i>		<i>A</i>	<i>I</i>	<i>TDC</i>	<i>PAD</i>	<i>PPS</i>	-

Source: NIE 1969, Table B2. Note: Rounded to nearest million. GNP figure also includes non output related items-adjustment for stock appreciation (-£7m), net factor income from abroad (+£24m), depreciation (+£12m), taxes (+£47m) and subsidies (£16m). For production method, sectoral shares weighted against each other, ignoring non-output related items. Weights assumed identical to GDP equivalent.

Table 3: Alternative Approaches used in Calculating Sectoral Output

	<i>Nominal</i>	<i>Volume</i>	<i>Deflator</i>	<i>Code and Appendix</i>	<i>Sub Category</i>	<i>Underlying Series [#]</i>
Agriculture						
1924-34	Collected	Constructed	Calculated	A; App. 1.I.	Crops and Livestock	34
1934-47	Collected	Collected	Calculated	A; App. 1.I.	Crops and Livestock	
1924-47	Collected	Constructed	Calculated	A; App. 1.I.	Fishing	
Industry						
1924-47	Collected	Collected	Calculated	I; App. 1.II.	Transportable and non-transportable goods	30
Transport, Distribution and Communication						
1924-47	Calculated	Constructed	Collected/Calculated	TDC; App 1. III	Transport	11
1924-47	Constructed	Calculated	Collected	TDC; App 1. III	Distribution/Trade	
1924-47	Calculated	Constructed	Collected/Calculated	TDC; App 1. III	Communication	
Public Administration and Defence						
1924-47	Collected	Constructed	Calculated	PAD; App 1.IV	Defense, Revenue Commissioners, Other Civil Service and Postal	10
Personal and Professional Services						
1924-38	Calculated	Constructed	Calculated	PPS; App 1 V	Personal Services	6
1938-47	Collected	Collected	Collected	PPS; App 1 V		
1924-47	Collected	Constructed	Calculated	PPS; App 1 V	Professional Services	
1924-47	Collected	Constructed	Calculated	PPS; App 1 V	Financial Services	

Source: See Appendix 1. Note: Classifications of methods broadly hold per sector. For some years in sub-sectors, other combinations (of Q, Y, P) may apply. For detail, the reader should see the appendix.

Table 4: Growth per sector and Labour Productivity Growth.

	A	I	S	GDP
	<i>Total Production</i>			
1926	100.0	100.0	100.0	100.0
1936	108.5	165.1	112.8	120.5
1946	106.3	177.8	119.7	125.0
	<i>Total Labour Force</i>			
1926	100	100	100	100
1936	93.8	125.7	103.1	101.0
1946	87.9	129.5	109.1	100.4
	<i>Labour Productivity</i>			
1926	100.0	100.0	100.0	100.0
1936	115.8	131.3	109.4	119.3
1946	120.9	137.3	109.7	124.5
	<i>Total Production- Growth Rates</i>			
1926-36	0.8	5.1	1.2	1.9
1936-46	-0.2	0.7	0.6	0.4
1926-46	0.3	2.9	0.9	1.1
	<i>Labour Productivity - Growth Rates</i>			
1926-36	1.5	2.8	0.9	1.8
1936-46	0.4	0.4	0.0	0.4
1926-46	1.0	1.6	0.5	1.1

Sources: See Appendix 1. For the labour force, the Censuses of Population (1926, 1936 and 1946) were used. Note: Services (S) is a composite index comprising TDC, PAD and PPS (See Appendix 1 iii-vi). All growth rates are annual compound averages.

Table 5: Growth Rates of Real GDP: Comparison of the New Series with existing Benchmarks

	<i>New Series</i>	<i>Maddison Project (2020)</i>	<i>Kennedy, Giblin and McHugh (1988)</i>	<i>Duncan (1940)</i>	<i>Gerlach and Stuart (2015)</i>	<i>NIE 1938-44 (White Paper)</i>	<i>Irish Statistical Bulletin (1956)</i>
1924-29	3.0	1.4					
1926-29	2.2	2.8		2.8			
1926-38	1.4	1.3	1.3	1.1			
1926-47	1.2	0.9					
1933-38	1.7	1.6		1.0	1.7		
1933-47	1.2	0.7			1.4		
1938-44	-0.3	0.0			0.0	-1.1	
1938-47	0.9	0.3	1.1*		1.2		
1938-52	1.8	1.3			2.0		1.3
1924-38	1.8	1.1					
1924-47	1.5	0.8					

Notes: *Refers to 1950. New series after 1947 uses GDP in constant prices to reach 1952 (from Appendix 2).

Table 6: GDP per Capita in the early years of Independence, 1921-6 (in \$2011)

GDP per capita	1921	1924	1926
Maddison (2020)	4,038	4,095	4,100
New Series	-	3,502	3,850
Share of Maddison (2020)		0.86	0.94
Shock Simulated	1921 GDP per capita	Share of Maddison (2020)	
The Emergency	3,644	0.90	
Great Financial Crisis	3,727	0.92	
The Famine	3,787	0.94	

Sources: For the Great Financial Crisis, growth rates for 2008, 2009 and 2010. The source is the online 'Historical Series' Appendix 2- xls). For the 'Emergency', growth rates for 1941, 1942 and 1943 were taken from the new series. For the Famine, growth rates for 1846, 1847 and 1848 were taken from Andersson and Lennard, 'GDP'. All figures expressed in \$2011 as in Maddison Project Database. Note: Population change in each simulation repeats the 1922-4 period estimated by Maddison (2020)

Table 7: GDP per Capita in a sample of European Countries, 1926 (in \$2011)

Country	GDP pc
Netherlands	8,541
UK	7,868
Belgium	7,626
Denmark	7,329
France	6,773
Sweden	5,756
Germany	5,746
Austria	5,440
Norway	4,750
Italy	4,576
Czechoslovakia	4,105
Ireland (Maddison)	4,100
Ireland (new)	3,850
Finland	3,813
Spain	3,650
Greece	3,475
Hungary	3,446
Portugal	2,262

Source: Maddison (2020) estimates, except for Ireland's new per capita estimate is taken from the new series. Note: All numbers expressed in \$2011 as in Maddison (2020).

Table 8: Irish Economic Growth compared with UK Regions

	1925-38		1938-50		1925-50		GDP pc ratio to Irl 1925
	GDP	GDP pc	GDP	GDP pc	GDP	GDP pc	
United Kingdom	2.1	1.6	1.2	0.7	1.6	1.2	2.1
London	2.8	2.0	-0.3	0.2	1.3	1.1	3.0
England	1.9	1.4	1.8	1.1	1.8	1.2	2.0
Wales	1.8	2.0	1.1	0.9	1.4	1.5	1.7
Scotland	1.7	1.7	0.7	0.2	1.2	1.0	2.0
Northern Ireland	0.4	0.2	2.7	2.1	1.5	1.1	1.6
Ireland	1.2	1.6	1.1	1.1	1.2	1.4	1.0
<i>Ireland (new series)</i>	1.5	1.9	1.6	1.7	1.6	1.8	0.9

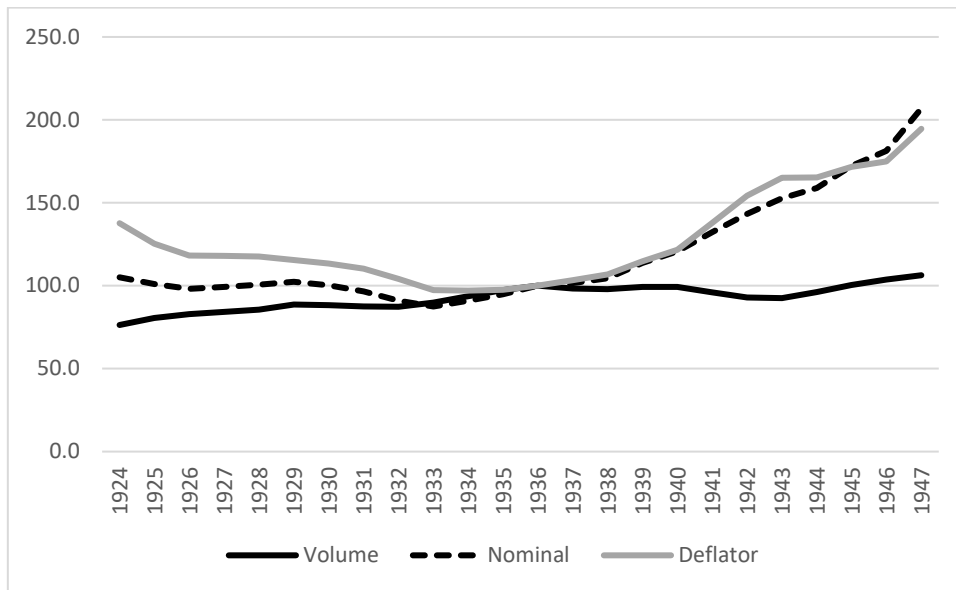
Sources. For Wales, Scotland, Northern Ireland, Ireland Rosés-Wolf Database on Regional GDP, v6 (2020). For New Series, see Appendix 2. Note: Reported in compound annual average growth rates.

Table 9: Annual Average Growth rates per decade

Period	GNP	GDP	GNI* (hybrid)
1924-29	3.1	3.0	3.0
1930-39	1.4	1.3	1.3
1940-49	1.8	1.9	1.9
1950-59	1.4	1.5	1.5
1960-69	4.0	3.9	3.9
1970-79	4.1	4.7	4.1
1980-89	1.1	2.3	1.1
1990-99	6.0	6.7	5.9
2000-09	1.9	3.0	1.4
2010-19	5.4	6.5	2.6

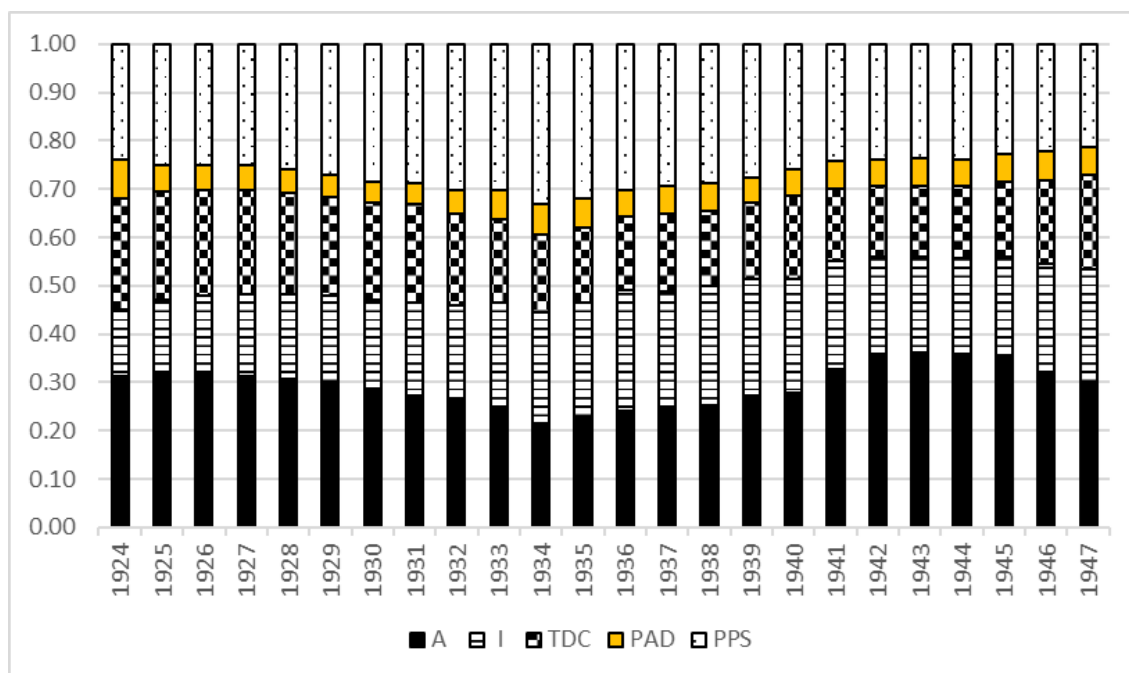
Source: Appendix 2. Note: Compound average growth rates. Hybrid GNI* series (1995-2019), spliced back using GNP changes (1970-1995) and GDP changes (1924-70).

Figure 1: Irish GDP, 1924-47



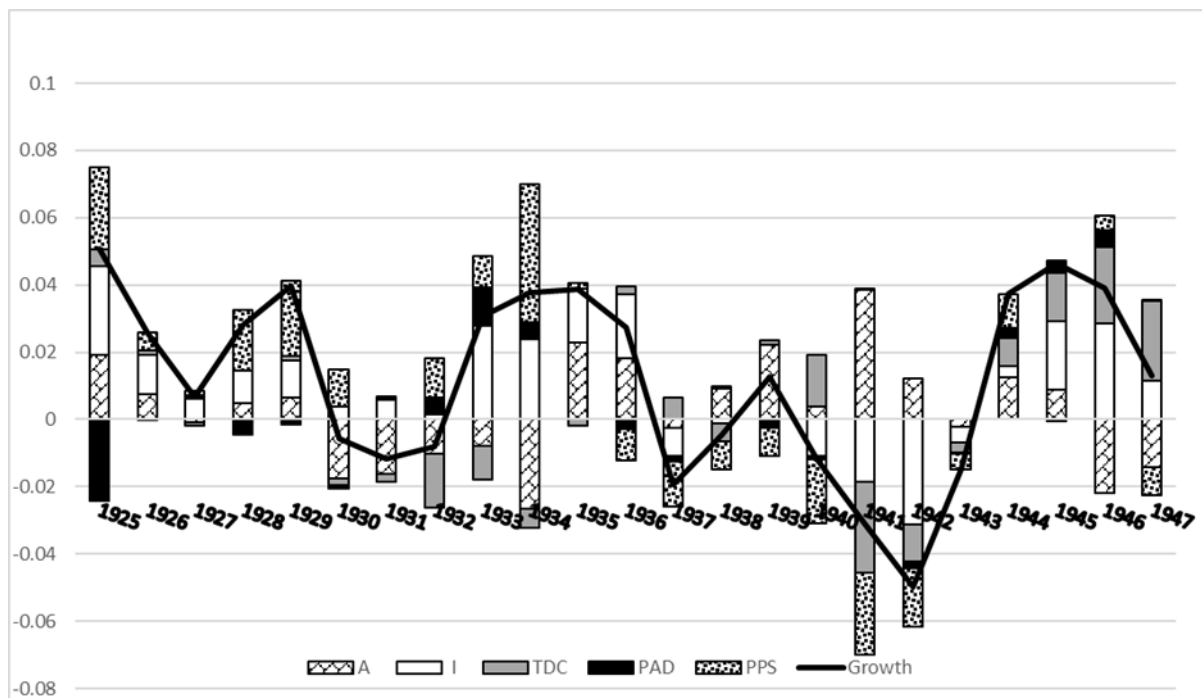
Source: See Appendix 1. Note: 1936 = 100.

Figure 2: Sectoral Composition of Irish GDP (shares of total)



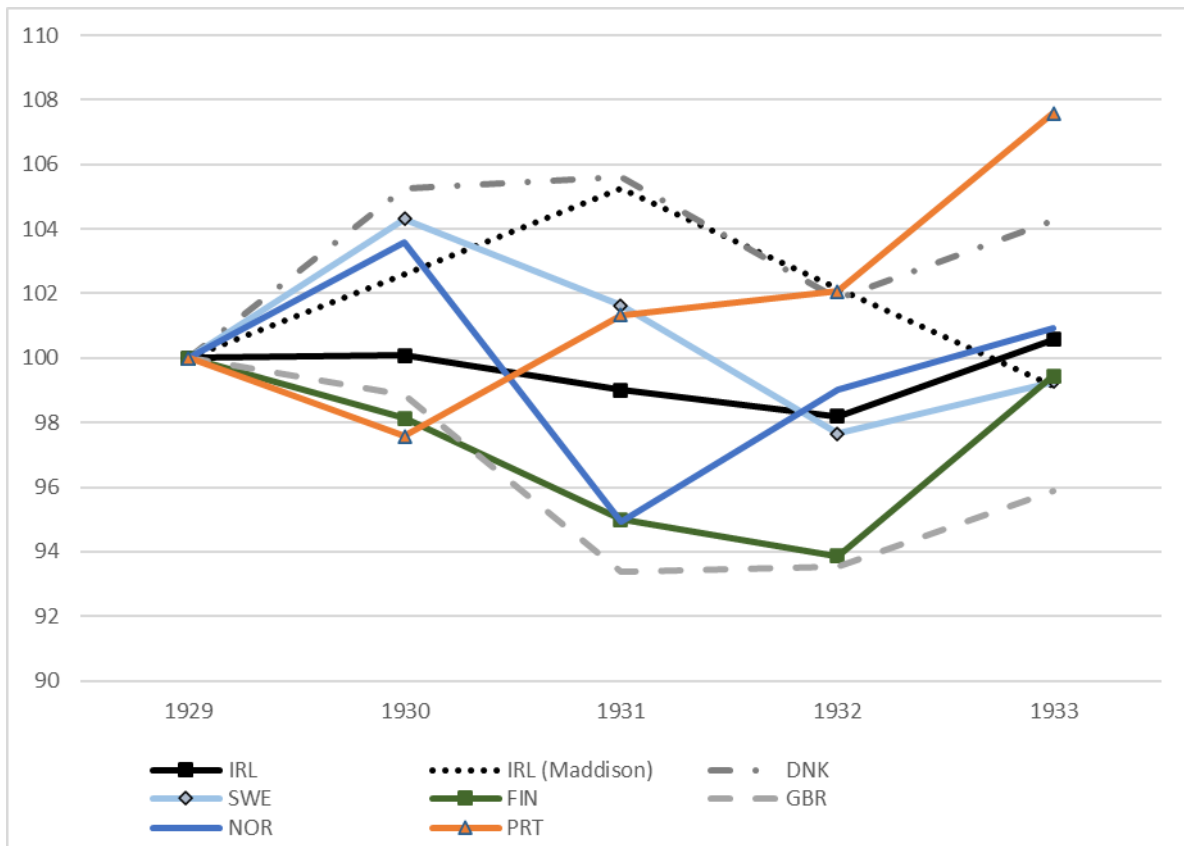
Source: See Table 1 for initial (1947) weights. The annual share of each sector in GDP is driven by the movement in the nominal GDP indices of those sectors prior to 1947. Weights do not account for non-output items (stock flow adjustments, remittances, taxes and subsidies).

Figure 3: Contributions to Aggregate GDP Growth by Sector



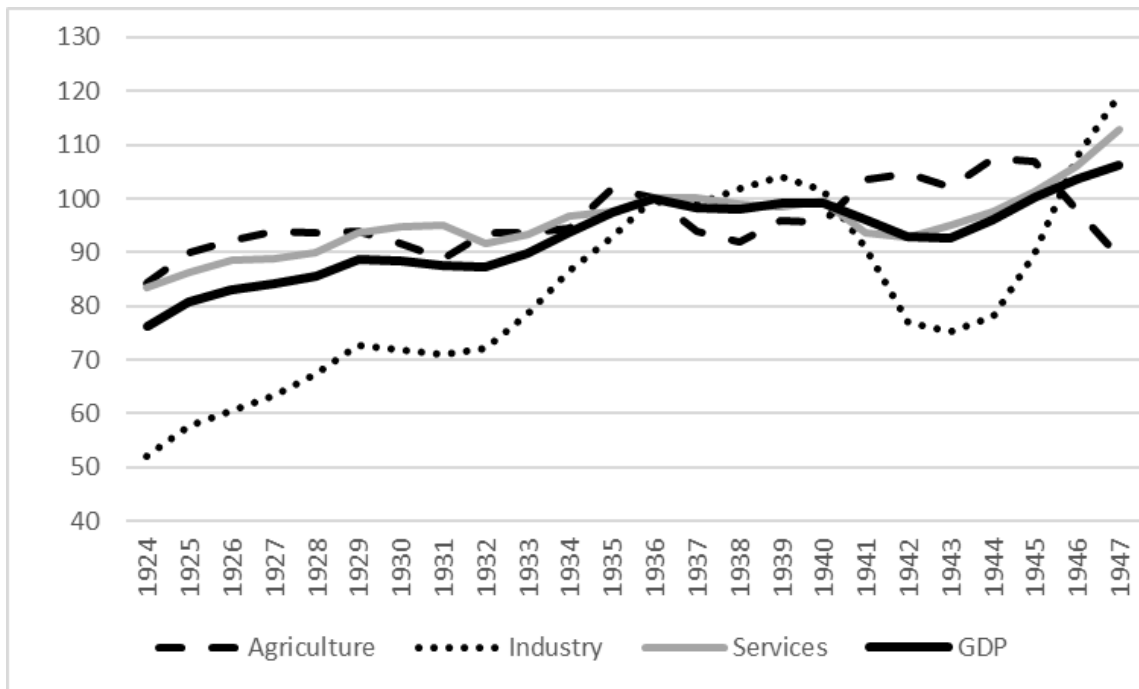
Source: See Appendix 1. Note Derived by calculation of standard contribution method using a Paasche index of sectoral indices. Growth rates vary in decimals from headline series (Laspeyres chain-linked).

Figure 4: GDP per capita levels through the Great Depression (1929-33)



Source: Maddison (2020) for all countries, except "IRL" (from new series). Note: 1929 = 100 in GDP per capita.

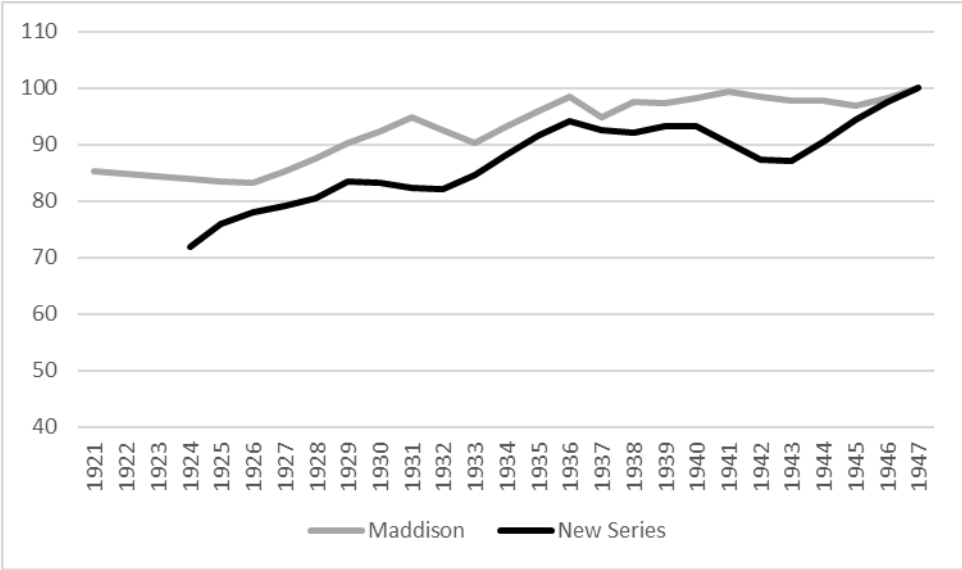
Figure 5: Irish GDP (volume) by sector, 1924-47



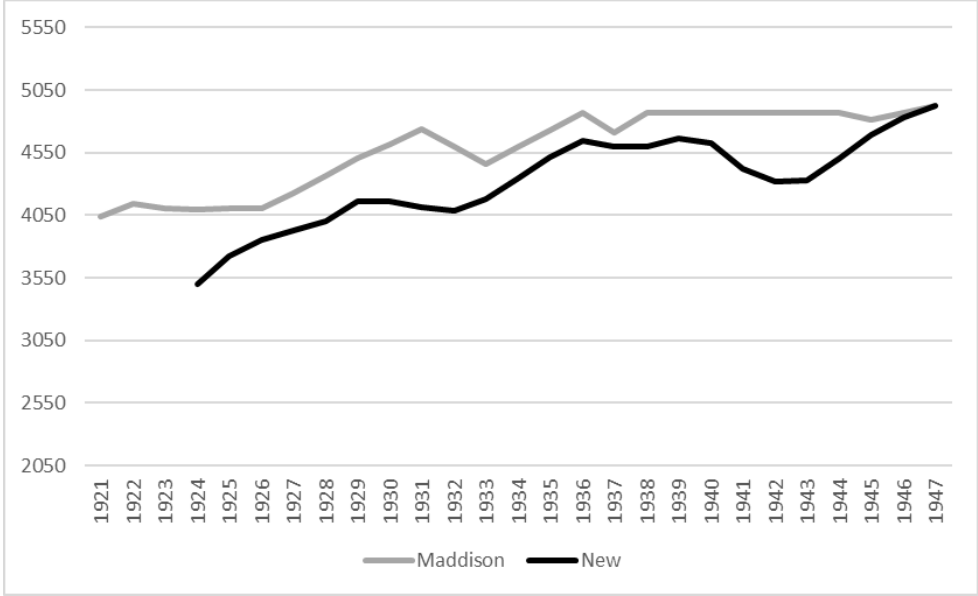
Source: See Appendix 1. Note: 1936 = 100

Figure 6: Comparison of New Series with Maddison Database

A) Total GDP

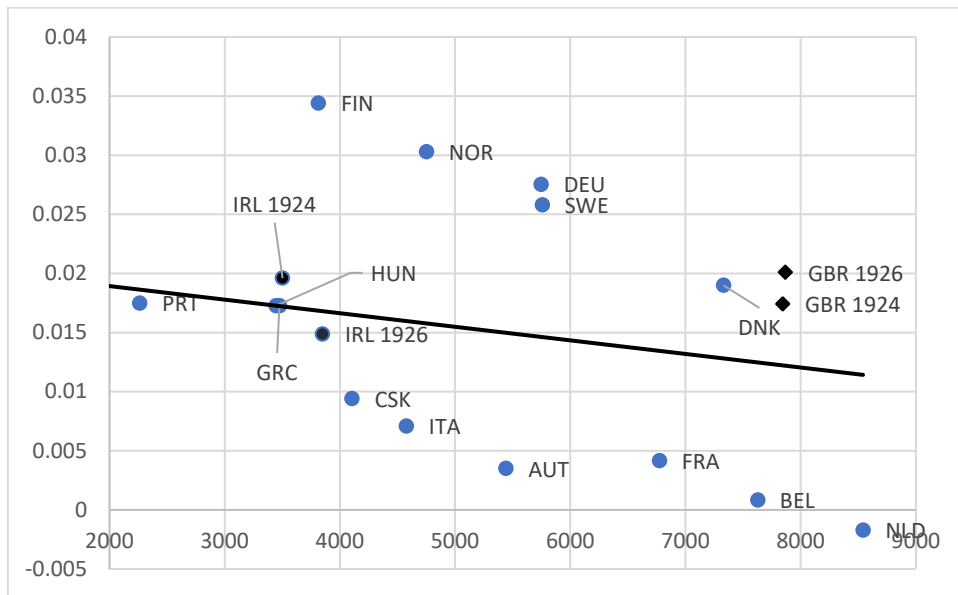


B) GDP per Capita



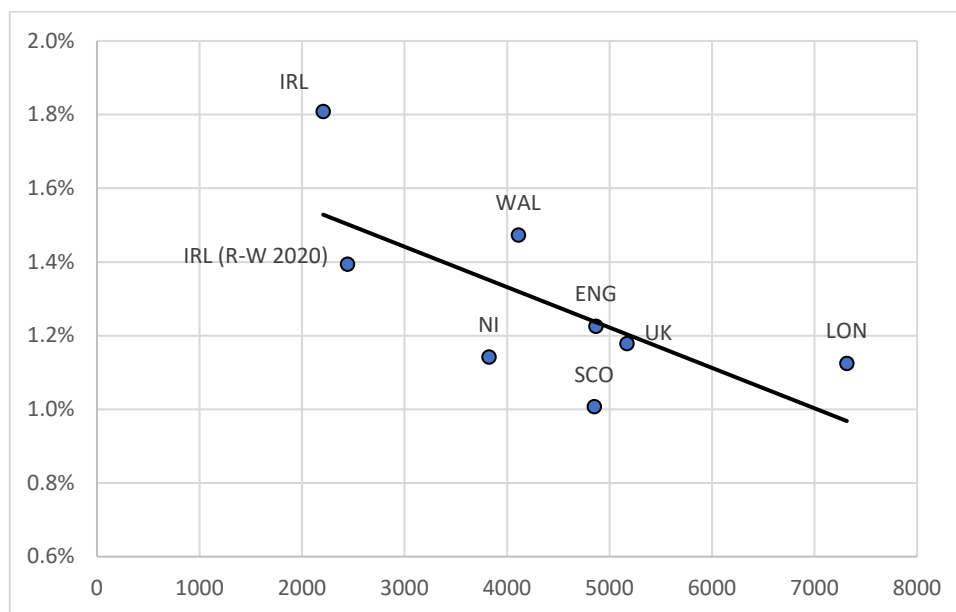
Note: Assumes equivalence in 1947 GDP per capita for Maddison (2020) and this work. Per capita GDP expressed in \$2011, Total GDP expressed as index 1947 = 100. For Maddison (2020), Total GDP is calculated by multiplying the per capita GDP by the population in the database.

Figure 7: GDP per capita growth (1926-38) and GDP per capita in 1926 (\$2011).



Source: Maddison (2020). Note: Expressed in \$2011 international dollars. Figures for IRL are from new series.

Figure 8: Regional GDP Growth (1925-50) and GDP per Capita (1925)



Note: GDP Growth on y axis (compound annual average rate) and 1925 GDP per capita on x axis (1990 international dollars). Sources. For all GDP per capita levels and other growth rates, Roses and Wolf (2020) referenced as (“R-W 2020”). Adjusted 1925 per capita comes from the assumption that Rosés and Wolf 1950 figure for Ireland is more accurate than the 1925 figure. This is subsequently spliced back using changes in new volume series (Appendix 2) and maintaining their population numbers.