STATE DISSOLUTION, SOVEREIGN DEBT AND DEFAULT: LESSONS FROM THE UK AND IRELAND

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State dissolution, sovereign debt and default:
Lessons from the UK and Ireland, 1920-1938[*]

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Abstract

We study Ireland's inheritance of debt following its secession from the United Kingdom at the beginning of the twentieth century. Exploiting structural differences in bonds guaranteed by the UK and Irish governments, we can identify perceived uncertainty about fiscal responsibility in the aftermath of the sovereign breakup. We document that Ireland's default on intergovernmental payments was an important event. Although payments from the Irish government ceased, the UK government instructed its Treasury to continue making interest and principal repayments. As a result, the risk premium on the bonds the UK government had guaranteed fell to about zero. Our findings are consistent with persistent ambiguity about fiscal responsibility far-beyond sovereign breakup. We discuss the political and economic forces behind the Irish and UK governments' decisions, and suggest lessons for modern-day states that are eyeing dissolution.

'Further, in view of all the historical circumstances, it is not equitable that the Irish people should be obliged to pay away these moneys' - Eamon De Valera, 12 October 1932

KEYWORDS: State dissolution, sovereign default, Irish land bonds, Dublin Stock Exchange.

JEL CLASSIFICATION: N23, N24, G15

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1 Introduction

When a nation state dissolves, a key question is how fiscal liabilities will be apportioned.[1] Although the United Nations 1983 Vienna Convention provides guidelines for transferring debt to seceding regions, it does not impose any legal obligation nor even suggest criteria for determining the allocation of debts (Williams & Harris 2001). Without guidelines, a seceding region typically must negotiate what fraction of the existing fiscal burden it will receive as a liability. In addition to sharing onus for outstanding sovereign bonds, negotiations may include such liabilities as state pensions, state-owned enterprises and unemployment benefits. Moreover, these deals may extend to non-pecuniary considerations, such as the boundary of regional independence, monetary policy and reparations for costs incurred during the path to independence. Unsurprisingly then, the business of ascribing fiscal responsibility within a disintegrating state is complex and erratic.

Some insight for the development of modern-day proceedings may be obtained by carefully studying historical precedents for regional secession where the designation of liabilities is somewhat transparent. In this paper, we study Ireland's secession from the United Kingdom (Great Britain & Ireland) at the beginning of the twentieth century.[2] Our historical case is especially useful because fiscal responsibility was determined well before independence and negotiations surrounding the debt were relatively transparent.[3] We focus on land bonds guaranteed by the UK (initially including southern Ireland) and Ireland (post-independence), which were used to implement land reform in Ireland under several Land Acts from 1890 to 1934. We use structural differences between UK-guaranteed land bonds and Irish-guaranteed land bonds to assess the *credibility* of UK guarantees after Irish independence.

We estimate the credibility of the UK government's guarantee using the yield spread

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[1] As an example of the general uncertainty associated with apportioning fiscal liabilities within dissolving nation states, consider the recent debate on Scottish independence. An issue that emerged in the debate was the allocation of responsibility for public debt within the UK should Scotland move toward independence (*Scotsman* 14 January 2014). In response, the UK Treasury declared it would honour all UK debt regardless of Scotland's role in the UK (UK Treasury 2014).

[2] The United Kingdom of Great Britain & Ireland was formed by the union of Britain (England, Wales & Scotland) and Ireland in 1801. From 1922, when Southern Ireland became independent with Dominion status, the United Kingdom was comprised of Great Britain and Northern Ireland. We use the term UK throughout and refer to southern Ireland as the Irish Free State or Ireland.

[3] For example, prior to the 1913 & 1920 *Government of Ireland* bills, there were several parliamentary publications regarding Irish contribution to UK national debt published which laid the foundation for the subsequent independence (B.P.P. 1912-13*b*,-,-, 1913, 1920*d,a,c,b*).

Figure 1: Weighted average (nominal amount outstanding) current yields

Source: Dublin Stock Exchange, authors' calculations
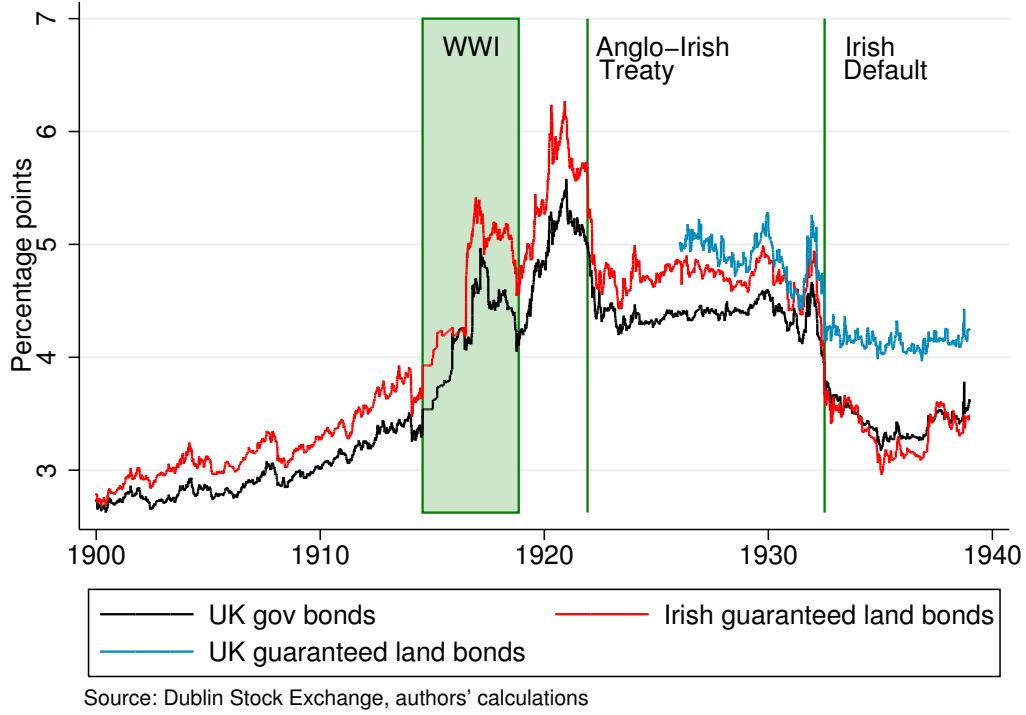
on land bonds over benchmark long-term UK government bonds. We calculate spreads based on current yields computed as the individual yields weighted by the nominal amounts outstanding, shown in Figure 1 for UK government bonds (the black line), UK-guaranteed land bonds (the red line) and Irish-guaranteed land bonds (the blue line), using our database of Dublin Stock Exchange records from 1900 to 1938 (Foley-Fisher & McLaughlin 2014). The yield on the land bonds was mostly a reflection of sovereign risk, evidenced by the listing of land bonds in the same category as sovereign and colonial bonds in contemporaneous stock exchanges. This distinguishes the land bonds from the quasi-government debt associated with specific utilities and infrastructure projects including, for example, the separate list of corporation/municipal bonds. The presence of the gold standard and de facto single currency between the UK and Ireland obviates the risks of inflation and exchange rate movements (e.g. see Daly (2011)).[4]

To evaluate which historical events were important to market perceptions of the value of the UK guarantees during this turbulent period, we agnostically search for long-lasting structural breaks in our time-series.[5] We detect several significant long-lived shifts in the

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[4] We discuss volatility and liquidity risks in Section 3.3.

[5] Similar empirical studies assess movements in the prices of sovereign bonds during the US Civil War (Willard

spreads. First, we find a decline in the spread on UK-guaranteed land bonds roughly coinciding with the signing of the Anglo-Irish Treaty. At that time, only land bonds guaranteed by the UK government were traded and our result is consistent with an elevated risk that farmers would default during the Anglo-Irish War, when an effort to enforce payment by the UK government might escalate the War. However, the UK-backed land bond spread remained positive after the treaty was signed. This suggests that investors might still have perceived some uncertainty about the value of the UK guarantee relative to other long-term UK government debt. In the absence of data on the spread on Irish-guaranteed land bonds, which did not exist at that time, we cannot be certain that this was the case.

More importantly, we detect another significant break coinciding with the Irish government's decision to no longer make annuity transfers to the UK government. The reneging of a sovereign financial obligation to another state constitutes a sovereign default.[6] However, largely because there was no actual loss for bondholders, this default is not recorded in established lists of sovereign defaults (Reinhart & Rogoff 2009, 2014). In response to the Irish default, the UK government instructed its Treasury to continue making interest and principal repayments, so no bond holders suffered any loss. Unsurprisingly, then, we find a reduction in the spread on UK-backed land bonds during 1932, while there is no reduction in the spread on Irish-backed land bonds. The implication is that once the UK government demonstrated that it would deliver on its guarantee, the risk premium (spread) on the land bonds it had guaranteed fell to about zero. Although Figure 1 suggests that the current yield fell below the weighted average bond yield in 1935-36, the consol yield remained below the land bond yield throughout the period.

Our findings are consistent with persistent ambiguity about fiscal responsibility well beyond the establishment of the Irish Free State. Until it was clearly demonstrated where sovereign liabilities would fall, the spread between the UK guaranteed land bonds and other long-term UK government debt remained positive, even after independence. Indeed, the spread fell to zero when the guarantee was actually tested and was proven good, while

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et al. 1996) and the Israel-Palestinian Conflict (Zussman et al. 2008). The use of structural differences in otherwise similar bonds to learn something about changing market perceptions is also present in the work of Collet (2013).

[6] Default is the term used by the UK government 'Irish Situation Committee' and the Chancellor of the Exchequer, e.g. 21 June 1932: 'Irish Situation Committee', National Archives of Scotland, CAB27/523. The Irish government characterised the debt as odious when explaining its action to the British government.

Irish-backed land bonds retained a premium only slightly wider than had been exhibited before the default. Thus, the main lesson of our paper for modern-day states that are eyeing dissolution is that uncertainty about the allocation of fiscal responsibility may last a long time, even when efforts have been made to allocate liabilities clearly.

Natural questions raised by this finding are why the UK government allowed the Irish government to renege on its commitment and why the UK government chose to repay bondholders. Existing economic literature shows that the credibility of a sovereign guarantee can be used as an input to a wide-range of economic features, including the cost of government finance (Flandreau & Zumer 2009), the perception of a government's commitment to respect property rights (IMF 2002), and the anticipated behaviour of the government as a counterparty in other contracts (Cole & Kehoe 1998). We find anecdotal evidence in support of all these considerations and discuss in detail the major economic and political forces behind the UK government's decision toward the end of this paper.

The remainder of our paper is divided into four sections. We review the institutional background in Section 2. We set out our empirical methodology and results in Section 3. We offer some concluding remarks in Section 4.

2   Institutional background

The political background to this paper is dominated by the Irish nationalist movement that during the nineteenth century adopted land reform as a major element in its identity (Lyons 1971, Boyce 2005, Dooley 2004). In an effort to curb this movement, the UK government introduced several pieces of legislation specifically to address problems associated with the structure of land ownership in Ireland. A sequence of parliamentary acts, beginning in 1891, endorsed the use of land bonds to finance state mortgages that were granted to tenant-farmers so that they could purchase the land they occupied.[7] The political motive for land redistribution was seen as crucial to counter the Irish nationalist movement. So the UK government was prepared to offer both generous mortgage terms

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[7] In addition, the land acts contained provisions for landlords to avail themselves of state credit (Gailey 1987). To the many small landlords heavily burdened with mortgaged estates, the low interest and long lifespan terms of the state loans were attractive and persuaded many of them to remain in Ireland, thereby alleviating the social tension associated with absentee landlordism. This generosity towards landlords was subsequently criticised by the Irish party at the same time that concerns arose that the land acts had been seriously underfinanced. Even UK political parties began to criticise the land acts for committing scarce Treasury resources to a strictly political gesture of conciliation, with no apparent formation of a prosperous agricultural society.

to tenant-farmers and generous land bond terms to investors, effectively transferring resources from taxpayers to farmers and bondholders. Table 1 shows the timing of these land acts in the context of other key events in the process of Irish land reform and Anglo-Irish political relations.

However, these land reform efforts did not halt the nationalist movement, which eventually achieved independence following the Anglo-Irish War through the signing of the Anglo-Irish Treaty in December 1921. Under the terms of this treaty, the Dominion of the Irish Free State was formed, comprising 26 of the 32 historic counties of Ireland. But a number of clauses within the text, such as the permanent partition of the island (section 11), an oath of allegiance to the King (section 4), and permanent ports for the use of 'His Majesty's Imperial forces' (section 7), were anathema to hardline republicans. The ratification of the treaty by the newly formed parliament (Dáil) of the Irish Free State led to a split within nationalist ranks and resulted in Civil War. The division of Irish politics ever since has been along civil war lines and not along traditional right-left lines as in other countries (Garvin 1981). This is important because De Valera's Fianna Fáil party, founded in 1926, was on the anti-treaty side and during its time in office in the 1930s it attempted to unilaterally re-write the treaty, taking advantage of the trans-national policy freedom provided by the 1931 Statute of Westminster (McMahon 1984).[8]

The treaty is also important because it overrode the 1920 Government of Ireland Act that had intended to annul the repayment of land bonds (B.P.P. 1920d).[9,10] After

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[8] The Statute of Westminster gave self-governing dominions of the Commonwealth constitutional and legislative equality with the UK. For the first time since its creation, Fianna Fáil were able to directly challenge UK rule from within the Irish parliament, despite the instructions passed to the then Irish High Commissioner in London, T. J. Kiernan, that 'whatever the legal powers which the statute of Westminster might confer on the Irish Free State Parliament, the moral obligation to abide by the Articles of Agreement [the Treaty] remained...and such an oral obligation was a higher sanction than any legal safeguard' (McMahon 1984, p.29). Contemporary debate argued that the Statute should include a limitation clause in relation to Ireland should it try to alter the terms of the treaty. At the time, Churchill, and other diehard conservatives, argued that 'if the imperial parliament passed the bill which was before it without inserting into it the proposed amendment, it would be leaving itself without legal protection against the bad faith and the ill will of some future Irish government' (Hancock 1964, p.330). During debates an amendment was introduced that aimed to deny Ireland access to the Statute but this was not incorporated in the final Act (Daly 2011, p. 30).

[9] It was later claimed in a press statement that this was purely for 'administrative convenience'. Under the Government of Ireland Act, both the Northern and Southern Irish governments were required to make an 'imperial contribution', fixed at £18 million a year. Against this each of the new governments was to receive 'a grant to assist her in setting up a subordinate Government which, merely as a matter of administrative convenience, was to have been fixed at the amount equivalent to the existing Land Purchase Annuities. It cannot be consistent to claim the benefits of the treaty of 1921 which gave the Irish Free State Dominion Status and also the benefits (without the obligations) of the Act of 1920 which would have regulated the position of Southern Ireland as a subordinate part of the United Kingdom.' ISC (Sub)(32) 6, 10 August 1932.

[10] It is unclear why the annuities were not included as part of the treaty. A later letter written by Liam S. Gogan and sent to the Minister for Finance 1932 suggested that there was confusion and the decision to include

Table 1: Timeline of key events in Irish land reform

Date	Event
August 1891	First use of land bonds under the Land Act 1891
August 1896	[Balfour] Land Act - second act to implement land reform using land bonds
August 1903	[Wyndham] Land Act - largest land act in terms of money raised via bond issue
December 1909	[Birrell] Land Act - additional issuance of land bonds with a higher coupon than 1903
August 1914	Outbreak of World War I
September 1914	Government of Ireland act - enactment of home rule bill giving Ireland devolved powers but act suspended due to outbreak of WWI
April 1916	Uprising by Nationalists in Dublin
January 1919	Beginning of the Anglo-Irish war
December 1920	Government of Ireland Act
December 1921	Anglo-Irish Treaty signed
April 1922	Irish Civil War begins
April 1923	Ceasefire ends Irish Civil War
August 1923	[Irish Free State] Land Act - first land reform act passed by Irish Free State
November 1924	First meeting of commission to settle boundary between Irish Free State & Northern Ireland
December 1931	Statute of Westminster grants greater legislative independence to Commonwealth Dominions
February 1932	Fianna Fáil win general election and form government
June 1932	Irish government misses deadline for payment of annuities
December 1934	Coal-Cattle Pact - agreement on quotas for coal & cattle
April 1938	Anglo-Irish trade agreement - resolution to trade war following default

independence the newly created Free State was obligated for four principal sources of debts: Irish Republic bond-certificates (issued to fund the War of Independence); land bonds; a share of the UK public debt; and new issuance. Section 5 of the 1922 Irish Free State (Agreement) Act stated that the Free State was liable for a portion of the UK public debt (Lee 1989). The Free State was subsequently released from this obligation under the 1925 Confirmation of Agreement Act, widely believed to have been a concession for accepting permanent partition of the island, with 6 counties remaining within Northern Ireland (Lee 1989, p.145 and Ferriter 2004, p.294).

Nevertheless, after this agreement, the Irish Free State remained obligated to transfer annuity payments to the UK exchequer as part of the complex process of repaying bondholders. Tenant farmers who had received loans from the Land Commission repaid annuities twice a year into Irish government administered funds: the Purchase Annuities Fund received payments on loans that were issued as part of the land reform acts pre-1923 and the Land Bond Fund received the payments on loans issued as part of the land reform acts post-1923. The holdings in these funds were transferred to the National

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annuities in the treaty was the unilateral decision of a Treasury mandarin, indicating that the official involved 'had ambitions for colonial governorship and that the surrender of the annuities had no other origin. The view was of course that they had been completely overlooked in the treaty legislation and that consequently we were entitled to retain them. A wrong decision having given them to London the precedent became stereotyped.' (Letter from Attorney General, S 2002/16/336).

Debt Commission (NDC)/Treasury, which made interest and principal repayments to bond-holders. Although these funds were segregated from other accounts of the Irish government, if either fund could not meet the expected transfers to the NDC/Treasury the Irish government would cover the shortfall using the Guarantee Fund, which was itself funded from local taxation taken from the Irish government's central fund.[11]

The Irish and UK government guarantees enhanced the value of the farmers' debt to investors. In the event that the farmers were to default on their annuity payments, the state would step in to ensure that the bondholders would remain whole. This credit enhancement allowed market participants to treat the debt as sovereign, evidenced by the listing of the bonds in the UK sovereign debt subsection of daily stock market reports, distinct from the lists of colonial, foreign government, and semi-state corporation debts. We follow contemporaneous market participants by treating the land bonds as de-facto sovereign debt, and attribute any difference between the yield on benchmark government securities and the yields on land bonds as reflecting the market's perception of the value of government guarantees.[12]
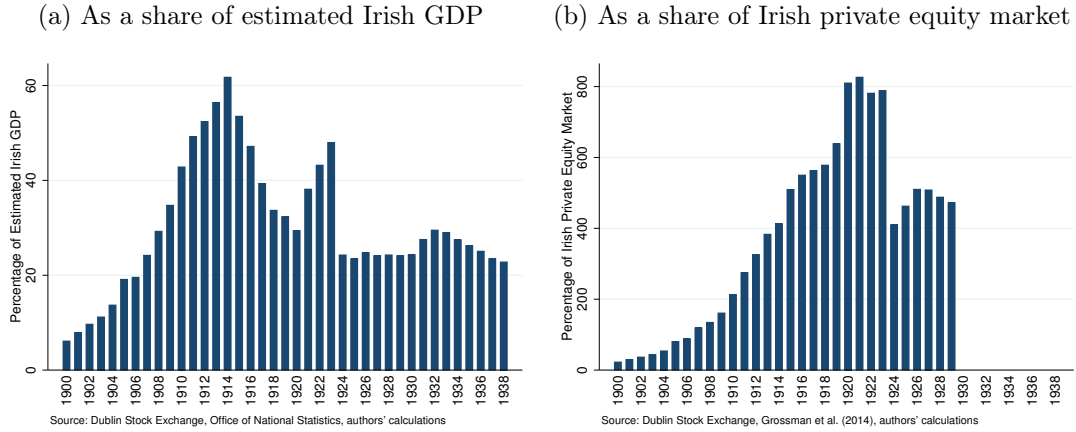
At the same time, the governments' guarantee was beneficial to the tenant farmers, allowed them access to large amounts of credit relatively cheaply. By intermediating between tenant farmers and capital markets, the government allowed farmers to borrow at lower rates and for longer terms than on private credit markets (Foley-Fisher & McLaughlin 2014). Unsurprisingly, farmers took advantage of these generous terms and borrowed significantly. By the time of independence in 1921, the nominal amount of land bonds outstanding was almost £60 million, rising to about £80 million by the end of our sample. Figures 2a and 2b show that the nominal value of all land bonds outstanding was a significant liability relative to the Irish economy. Land bonds peak at over 60 percent of estimated Irish GDP in 1914 and are worth about 40 percent of Irish economic output at the time of independence. Further, the nominal value of outstanding land bonds was massive relative to the private company equity listed on the Irish equity market, peaking

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[11] We are grateful to Aidan Kane for pointing this out.

[12] Since the underlying asset is a pool of long-term mortgages, this kind of credit enhancement is an early example of state-sponsored mortgage backed securities (MBS), such as those issued by US government-sponsored agencies Fannie Mae and Freddie Mac. Agency MBS trade at a premium to private label MBS in reflection of an implied government guarantee, but are not treated equivalent to US Treasuries. Indeed, during the 2007-2008 financial crisis, the US government had to affirm explicitly its support for GSE debt in response to elevated concerns that the GSEs might default (Hancock & Passmore 2010).

Figure 2: Outstanding land bonds

(a) As a share of estimated Irish GDP

(b) As a share of Irish private equity market

Source: Dublin Stock Exchange, Office of National Statistics, authors' calculations

Source: Dublin Stock Exchange, Grossman et al. (2014), authors' calculations

at around eight times the entire market capitalization during the early 1920s.[13]

Differences in the sovereign guarantees attached to the land bonds allows us to identify changes in the value of the guarantees over time. Although all the land bonds were 'backed' by a stream of annuity payments from Irish farmers, credit enhancement from the sovereign was the major factor ensuring the high value (low coupon) of the bonds.[14] Some of the land bonds carried UK government guarantees, while others carried Irish government guarantees. As reported in Table 2, the first three issues of land bonds were made prior to Irish independence with UK government guarantees. After independence, the Irish government guaranteed the issuance of three additional land bonds, one of which was co-guaranteed by the UK government.[15] We can measure changes in market participants' views on the value of the sovereign guarantees by looking at the change in the spread on the land bonds over UK sovereign bonds, considered at that time to be the benchmark risk-free bonds on the Dublin Stock Exchange.[16]

Land bonds had a long maturity, matching the farmers' long mortgage repayment

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[13] We are indebted to the authors of Grossman et al. (2014) for sharing their data on the Irish equity market.

[14] The bonds were sold at a discount in the primary market. Nevertheless, the secondary market current yield was competitive with other contemporaneous UK sovereign bonds (Foley-Fisher & McLaughlin 2014).

[15] Although the coupons are higher on the land bonds guaranteed by the Irish government, the offer needs to be taken in the context of other sovereign debt issued at that time.

[16] In addition to the Dublin Stock Exchange, early land bonds were listed on many stock exchanges throughout the UK and Ireland, while later land bonds were traded more narrowly. The location of trading was unrelated to credit ratings. According to Moody's all outstanding land bonds in 1922 had AAA ratings and all were 'full obligation of British government' (Blakemore 1922, p.49). Issuance under the 1903 land act was listed on the London, Birmingham, Dublin, Glasgow, Liverpool and Manchester stock exchanges, whilst the subsequent issuance under the 1903/09 land acts was listed on the London, Cork, Dublin, Glasgow and Manchester stock exchanges. The relatively small issuance under the 1891 land act was solely listed on the Cork and Dublin Stock exchanges. The land bonds guaranteed by Ireland were quoted in Dublin and Cork and for some years also on the London Stock Exchange (Thomas 1986). The Dublin stock exchange was closed from August 1914 until 30 December 1914. In addition, price floors were introduced in 1914 which placed minimum prices on trading.

Table 2: Dublin Stock Exchange: land bonds

	Coupon %	Coverage Window First Date	Coverage Window Last Date	Max Issuance £m	Gov. Guarantee
Pre-independence land bonds					
Gtd. land stock, red. 1921	2.75	1892/7/27	1938/12/30	13.20	UK
Gtd. land stock from 1903 land act	2.75	1904/7/19	1938/12/30	57.26	UK
Gtd. land stock from 1903/09 land act	3	1910/12/19	1938/12/30	71.50	UK
Post-independence land bonds					
Land bonds	4.5	1926/1/20	1938/12/30	24.88	UK/Irl.
New land bonds	4.5	1934/2/8	1938/12/30	.59	Irl.
Land bonds (land bond act 1934)	4	1934/10/26	1938/12/30	2.81	Irl.

Source: National Archives records of the Dublin Stock Exchange

Table 3: Benchmark long-term UK government bonds

Bond	Coverage First Date	Coverage Last Date	Coupon	Max Issue £m
2.5% stock	1890/1/6	1938/9/26	2.5	33
Consol	1890/1/6	1938/12/30	2.5	592
2.75% stock	1890/1/9	1938/9/26	2.75	5
2.75% war	1900/5/14	1910/5/11	2.75	30
Exch. (1905)	1901/11/21	1905/12/6	3	14
Exch. (1909)	1905/6/15	1909/10/13	3	6
Exch. (1915)	1913/3/12	1915/7/15	3	21
War (1925-28)	1915/4/16	1928/2/7	3.5	350
War (1925-45)	1915/8/30	1932/10/26	4.5	900
4% victory	1919/9/16	1938/12/30	4	360
Exch. bills	1922/6/22	1930/3/3	3	4
3.5% war	1932/12/1	1938/12/1	3.5	2085

Source: National Archives records of the Dublin Stock Exchange
Note: All long-term bonds have a maturity of at least 30 years.

terms. This means that we need to use long-term UK sovereign bonds when calculating the yield spread on land bonds over benchmark UK sovereign debt. We include in our calculations UK government bonds that have a maturity of at least 30 years (listed in Table 3). For all bonds, we first compute the current yield as the ratio of the coupon to the daily price. Although a number of bonds in our sample contain lottery provisions, we follow existing literature (Mauro et al. 2006, Ferguson 2006) in using the simplified calculation. We construct clean bond prices whenever they are quoted inclusive of accrued dividends, assuming for simplicity a discount rate of 3 percent. In addition, we follow the methodology of Klovland (1994) when calculating the yields on UK consols. We then calculate the daily weighted average current yields for benchmark UK government bonds, UK guaranteed and Irish guaranteed land bonds, where each bond is weighted by its nominal value outstanding.

Given the institutional structure described in this section, we can identify changes in

the credibility of government guarantees on the land bonds. We interpret the common movement in the spreads of both UK and Irish guaranteed land bonds as reflecting changes in the risk of tenant farmer default. More importantly, idiosyncratic movement in the government-backed land bond spread reflects changes in perceived uncertainty about the government default risk. In particular, we will look for significant changes in the spreads on land bonds and compare our findings with the historical narrative to develop intuition for changes in perceived fiscal responsibility.

3 Structural breaks in land bond spreads

In this section, we apply the structural break search methodology pioneered by Willard et al. (1996) and employed by Zussman et al. (2008). With land bond spreads that reflect UK and Irish guarantees, our objective is to identify significant structural breaks in the time series of land bond spreads over UK government bond yields. We can then use these structural breaks to learn about changes in the market perception of government guarantees.

3.1 Methodology

We use a recursive search algorithm to find long-lived shifts in the perceived value of sovereign guarantees, measured as the spread in land bond yields over UK government bond yields. We look for shifts in the mean of the spread, since no trend term is expected in typical models of sovereign bond spreads in non-crisis times (Aguiar & Amador Forthcoming). In the first stage of the algorithm, given a time series of land bond spreads (y) indexed by time (t) we estimate the following model for the first 600 sequential daily observations:[17]

$$y_t = \alpha + \sum_{l=1}^{L} \beta_l y_{t-l} + \gamma D_t, \quad t \in \{1, .., 600\} \tag{1}$$

$$\text{where } D_t = \begin{cases} 0, & \text{if } t < 300 \\ 1, & \text{otherwise} \end{cases} \tag{2}$$

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[17] As a robustness check, we repeated the analysis using 400 and 800 sequential observations and find similar results. The lag length L is determined by estimating over the full sample the model excluding the dichotomous variable and sequentially removing lags according to the Akaike information criterion.

We compute the F-statistic associated with the test of the null hypothesis that $\gamma = 0$, i.e. that there is no structural break in the land bond spread on date $t = 300$. Then the subsample is advanced by one period, $t \in \{2, .., 601\}$, and the model is re-estimated. By collecting the statistics from testing the significance of γ parameters from each estimated model, we can construct a time series of tests for structural breaks in the yield spread on land bonds.

In the second stage of the search algorithm, we use the largest significant γ statistic to identify a window that is most likely to contain a structural break.[18] That window is extended by 25 days at both ends and is removed from the time series. Repeating this process yields a set of non-overlapping windows that are likely to contain structural breaks. In each enlarged window, we sequentially search for structural breaks within the narrower window by estimating the following model for $s \in \{26, .., 625\}$:[19]

$$y_t = \alpha + \sum_{l=1}^{L} \beta_l y_{t-l} + \gamma D_t^s \tag{3}$$

$$\text{where } D_t^s = \begin{cases} 0, & \text{if } t < s \\ 1, & \text{otherwise} \end{cases} \tag{4}$$

3.2 Results

Figures 3a and 3b show the results over the period 1921-1938 from applying the algorithm described above to UK and Irish guaranteed land bond spreads, respectively. The solid (red) lines in each panel show the time series of the weighted average land bond spreads over UK government bonds. The short-dashed (yellow) lines show the sequential first stage γ statistics and the long-dashed (black) spikes show the structural breaks identified by the second stage of the algorithm.

We find three significant structural breaks in land bond spreads, all of which are in the spread on UK guaranteed land bonds.[20] The first break in 1921 occurred on the
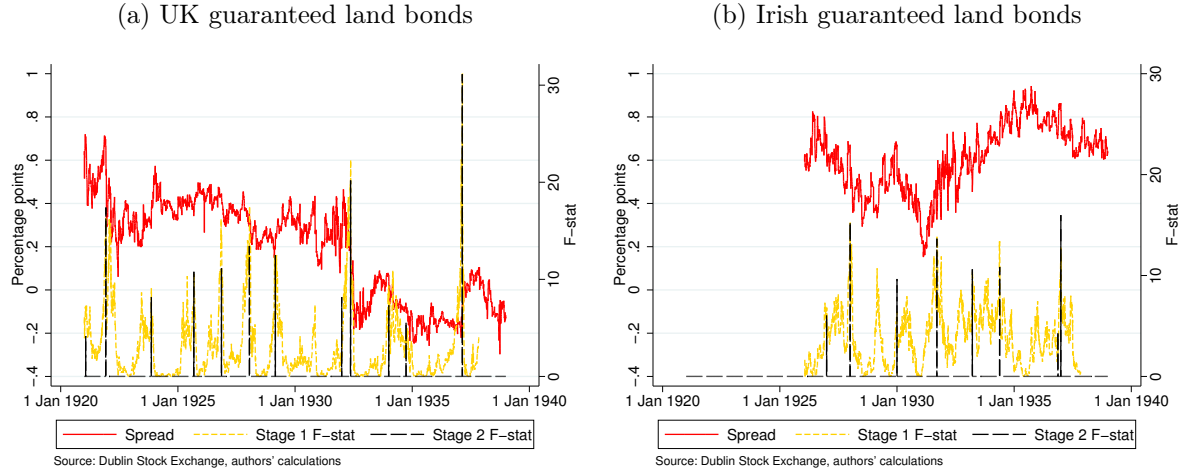
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[18] The overlapping data samples in the first stage invalidate the use of standard critical values for tests of significant structural breaks. Instead, we estimate the critical values using 5000 Monte Carlo simulations of an artificial time series without structural breaks: $y_t = 0.9y_{t-1}$. For a window of 600 days, the 90- 95- and 99-percent critical values are 6.4, 8.4, and 12.9, respectively.

[19] We use the same null model to simulate statistics for the second stage of the algorithm, to obtain 90- 95- and 99-percent critical values of 16.5, 18.8, and 24.6, respectively. These critical values are consistent with those reported in Table 2 of Banerjee et al. (1992).

[20] We estimate the model over the full sample of UK-backed land bond spreads, but we report the results only for 1921 onwards. Results for the full sample are available from the authors on request.

Figure 3: Structural breaks in the spread on land bonds over UK bonds

(a) UK guaranteed land bonds

(b) Irish guaranteed land bonds

Source: Dublin Stock Exchange, authors' calculations

Date	Stage 1 F-stat	Stage 2 F-stat
25/1/1921	7.18	4.16
5/12/1921	**16.44**	**17.4**
14/11/1923	9.08	8.16
7/9/1925	10.34	10.78
11/11/1926	10.85	11.15
20/1/1928	17.54	13.44
28/2/1929	7.55	12.5
29/12/1931	7.38	8.18
16/5/1932	**22.3**	**20.19**
1/1/1934	10.96	7.32
27/9/1934	2.18	5.62
19/2/1937	**31.18**	**31.13**

Date	Stage 1 F-stat	Stage 2 F-stat
31/12/1926	3.18	6.06
2/1/1928	15.24	15.3
1/1/1930	7.94	9.66
15/9/1931	13.84	13.66
21/3/1933	6.57	10.62
21/5/1934	13.4	10.85
13/11/1936	4.92	4.44
29/12/1936	12.76	15.99

UK-backed land bond spread at roughly the same time that the Anglo-Irish Treaty was signed. This finding is consistent with an elevated risk that farmers would default during the Anglo-Irish War, when an effort to enforce payment by the UK government might escalate the War. Unfortunately, we cannot be certain that this was the case without comparing to the spread on Irish-guaranteed land bonds, which did not exist at that time. Nevertheless, the UK-backed land bond spread remained positive after the treaty was signed, suggesting that investors might have still perceived some uncertainty about the value of the UK guarantee relative to other long-term UK government debt.

The second break occurred in the first half of 1932, corresponding to the default episode. A real possibility that Ireland might default on its intergovernmental obligations began to emerge towards the end of 1931, but negotiations and responses to the actual default event were strung out throughout 1932. In February 1932, reversing the allocation of seats between the top two parties, Fianna Fáil defeated the incumbent party Cumann na nGaedheal by 72 seats to 57, after campaigning on a platform that included withholding annuity payments. Shortly after the election of the Fianna Fáil government, a bill to remove the oath of allegiance was introduced in parliament and De Valera made a series of public announcements in March that the Free State would not honour the bi-annual payments due under various financial agreements between Ireland and the UK.[21] The prospect of the Irish government's withholding of annuity payments increased at the same time that it became clear that the UK government would not default on the bondholders.[22] On 30 June, one day before the dividend payment on the land bonds, *The Times* announced that the British government considered the Free State to intend

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[21] Hancock (1964, p.334) cites several newspapers, *the Observer* 21 February 1932, *the Manchester Guardian*, 16 March 1932 and the *New York Times* on 18 March 1932.

[22] At the same time as it considered 'various courses of action which might be taken by the United Kingdom Government to recoup themselves for [the anticipated Irish default]', negotiated with the Irish government in an effort to ensure that the £1,250,000 due from the Irish Free State on Account of the Land Annuities before the 1st July would be made (ISC (32) 31, 6th meeting, 21 June 1932). Although no final deal was reached, negotiations continued throughout the first half of the year, including meetings between De Valera and the UK government on June 10, and an agreement was reached whereby the annuities would continue to be collected and held in a suspense account pending arbitration. The Treasury was reluctant to open the payments to arbitration, noting that 'Before, however, committing ourselves to accept arbitration in the case of the financial issues, including the Land Annuities, we should be very careful to see that we had a good case in law as well as in equity. It would be very embarrassing if the Tribunal found that while the Free State were morally bound, they were not in law formally bound by the Agreements...We should be subjected to every kind of misrepresentation, and unfortunately it was not generally known that at the time when the financial settlement was negotiated we had made such tremendous concessions to secure agreement that there was now nothing more left for us to concede.' ISC (32) 28, 7th meeting, 5 July 1932. For its part, the Irish Free State was unwilling to accept arbitration that did not have non-Commonwealth members(B.P.P. 1931-32*a*).

to default and that the British Treasury would cover the payment.[23] The following day, the British government made the interest payment on those bonds.[24]

The third and final structural break occurred towards the end of the sample, at the beginning of 1937. A glance at the spreads in Figures 3a and 3b suggests that the identified change is probably due to few observations at the end of the sample. Our data sample ends at the same time that negotiations conclude the trade war between Ireland and the UK. We think it is unlikely that the opening of negotiations were sufficient to cause a structural break in the yield spread and there were no other major events in the UK or Ireland around that time. For these reasons, we focus the remainder of our paper on the first two structural breaks.

3.3 The long-term effect of structural breaks

Circulating rumours and the gradual development of major political events imply that the impact on bond spreads is diffused around significant events. Consistent with our empirical methodology, we assess the long-term effect of the structural breaks. To characterise the broader picture of the effect of the default on the bond market, we look

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[23]"The cabinet considered yesterday the position created by the refusal of the Irish Free State to pay t the half-yearly land annuities, amounting to £1,500,000 which are now due. Unless the money is in the hands of the National Debt Commissioners by midnight tonight the Free State will be in default, and as it is taken for granted that Mr. de Valera has no intention of handing the money over the Cabinet had to consider the next steps that must be taken. The Irish land stock is guaranteed by the British Treasury, and the holders will therefore receive their dividends as usual tomorrow. The Treasury will provide the money which will enable the Bank of England to make the payment but the Cabinet are determined that the burden shall not be borne by the British taxpayer. It was therefore agreed that steps should be taken to recover the money from the Irish Free State and when the business for next week is announced in the House of Commons today it will be found that time has been set apart for legislation on the subject which will be placed on the State Book before the summer recess. It is understood that the government will ask parliament to pass a measure giving the Treasury power to impose special duties on goods imported from Ireland, including livestock and dairy produce, notwithstanding the provision the import duties act that all goods imported from the Dominions shall enter this country free of duty until November 15. As the Bill will impose a tax, it is necessary for it to be preceded by a resolution in Committee of ways and means, and this resolution will be discussed on Monday." *The Times*, 30 June 1932.

[24] According to the Press release, 'The British Government duly fulfilled their guarantee in respect of interest payments to holders of land bonds whether in Ireland or in Great Britain, but the Government did not feel it fair to the taxpayers of this country to impose upon them this additional burden due to the failure of the Irish Free State to meet its just obligations. Moreover, other payments due by the Irish Free State, amounting in all to over £400,000, had not been made. In the circumstances the only course open to the British Government was to take steps to recoup themselves for the additional charge imposed on United Kingdom funds, and to this end they took action to pass the Irish Free Sate (Special Duties) Act and to issue an Order under it charging special duties on certain articles imported from the Irish Free State. ISC (Sub) (32) 6 (revise) - copy no 17-10 August 1932. The British Prime Minister compared the Irish decision to not make obligations to contemporaneous defaults throughout the world. He noted that 'On the question of the Land Annuities, on which default might be expected in June 1932, the feeling of the Committee was that this issue, serious as were the financial loss and the breach of faith involved, was transcended by the issue of allegiance. The default might be compared to the cases which had occurred in other parts of the world of failure to meet loan obligations. (ISC (32) 24, 2nd Meeting, 12 April 1932).

Table 4: Descriptive Statistics: UK and Irish Guaranteed Land Bonds

	Yield Spread		St. Dev. of Returns		Yearly Liquidity	
	UK	Irl.	UK	Irl.	UK	Irl.
N	5218	3378	5218	3378	20	13
Median	4.67	4.36	-.0001	-.0001	.84	.98
Mean	4.4	4.52	.0001	.0001	.84	.9
St Dev	.8	.4	.0036	.004	.03	.02

Note: The data sample is the post-War period (1919 onwards).

at the statistical properties of current yield spreads in the years prior to the structural breaks in comparison with the years after the events. Any movement in spreads could be attributable in part to a fall in the volatility of returns or a rise in the liquidity for UK-backed land bonds relative to Irish-backed land bonds. To address these concerns, we also calculate return volatility and a proxy for liquidity. Return volatility is measured using a 250-day rolling standard deviation of daily returns. Our liquidity proxy is measured at an annual frequency and uses, for each year, the ratio of days on which the bonds were traded relative to the number of days on which the bonds could have been traded. Table 4 reports summary statistics for each of these variables separately for UK and Irish guaranteed land bonds.

The first two columns of Table 5 show the long-term change in the yield spread on land bonds over UK government bonds that occurred during the years 1921 and 1932. The constant term is the average spread in percentage points in the benchmark period. In the case of UK-backed land bonds the benchmark years are 1918-1921 while for Irish-backed land bonds the benchmark years are 1923-1932. Thus, during the benchmark years, both UK- and Irish-backed land bonds had a spread of about 60 basis points over long-term UK government bonds.[25]

The coefficient on the dummy variable for the years following independence shows the long-term change in land bond spreads after 1921. The first column shows that UK-backed land bond spreads fell about 20 basis points (Irish-backed land bonds were

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[25] In Ireland, the spread-implied credit risk is low compared with similar countries (for example, Bulgaria and Hungary) without the assistance of of well-placed underwriters, and the League of Nations in the case of post-war economies (Eichengreen 1989, Flandreau & Flores 2009). In part, this may have been due to its inheritance of institutions that were well-known to British investors.

Table 5: Effect of Default on UK and Irish Guaranteed Land Bonds

| | Yield Spread | | St. Dev. of Returns | | Yearly Liquidity | |
	UK	Irl.	UK	Irl.	UK	Irl.
Constant	0.589***	0.626***	0.005***	0.004***	0.828***	0.964***
	(105.99)	(177.54)	(170.84)	(169.34)	(96.95)	(125.05)
Independence	-0.218***		-0.002***		0.012	
	(-37.34)		(-52.71)		(0.81)	
Default	-0.370***	0.289***	0.000***	-0.001***	0.006	0.021***
	(-115.07)	(75.13)	(10.60)	(-27.17)	(0.34)	(2.58)
No. of Obs.	4697	3117	4607	3114	18	12
Adj. R-Sq.	0.89	0.67	0.35	0.25	-0.10	0.34

Note: Robust t-statistics are reported in parentheses. The variables 'Independence' and 'Default' equal zero before, and one after, the independence and default events, respectively. The data sample is the post-War period (1919 onwards). Data during the years of independence and default are omitted. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent level, respectively.

not traded prior to 1923). Similarly, the coefficient on the dummy variable for the years following default indicate that the spread on UK-backed land bonds fell about 40 basis points during 1932 while the spread on Irish-backed land bonds rose by about 30 basis points.[26] Thus, by the end of our sample period, the spread on UK-backed land bonds had dropped to about zero, with most of the decline occuring as a consequence of the default event.

The absence of a spread in the yield on UK guaranteed land bonds after 1932 indicates that investors ceased to treat the land bonds as risky investments relative to UK government bonds. Although the spread was not large in the years prior to the default, they were significantly different from zero, indicating that investors perceived positive credit risk despite the guarantees that the bonds carried from the UK government. After the Irish government defaulted, and the UK guarantee was upheld, investors re-evaluated the risk associated with the UK-backed land bonds and began to treat them as if they were identical to other long-term UK government bonds. At the same time, the perceived

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[26]For some context, Eichengreen (1989)'s study of yield spreads in the 1930s had a mean of 0.46 percent and a standard deviation of 1.2 percent.

credit risk associated with Irish-backed land bonds, which was already higher than that of UK guaranteed land bonds, rose perhaps as investors updated their assumptions about the willingness of the Irish government to default on at least some of its obligations, if the economic and political circumstances justified the action.

As noted above, the movement in spreads could be attributable in part to a fall in the volatility of returns on UK-backed land bonds relative to Irish-backed land bonds, or a rise in the liquidity of UK-backed land bonds relative to Irish-backed land bonds. However, the remaining columns of the same table show that the return volatility and the liquidity of land bonds moved in the opposite direction from that needed to explain the movement in the spreads. The third and fourth columns of Table 5 report the change in return volatility, indicating that the return volatility of UK-backed land bonds increased significantly in the years after the default while the return volatility on Irish-backed land bonds decreased. The fifth and sixth columns report the change in our annual liquidity proxy. Albeit with few datapoints, the available evidence suggests that there was no change in the liquidity of UK-backed land bonds while the liquidity of Irish-backed land bonds actually rose. These volatility and liquidity findings are not consistent with the relative decline in the credit risk associated with UK guaranteed land bonds and imply that the relative movement reported in Table 5 is a lower bound on the movement due to the default.

A further concern is that the movement in the spread on land bonds may be attributable to UK government policies. Although the yields on land bonds moved broadly in step with UK government bonds throughout 1931 (even as the UK government announced its emergency budget and abandoned the gold standard in September 1931) it is possible that the land bonds were reacting to the removal of an elevated risk of restructuring, perhaps related to a widely-anticipated conversion of the gigantic 5 percent War Loan.[27, 28] However, Figure 4 shows that the movement in the spread is more likely

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[27] The interest payments on the burdensome War Loan accounted for almost 14 percent of UK fiscal revenue in 1932 and were viewed by the UK government as an economic drag to recovery from the Great Depression. Although the conversion had been signalled in the previous year, with technical and legal preparations included in the National Debt (War Loan Conversion and Redemption) Bill and in the Finance (No. 2) Act 1931, the details of the conversion were not publicised until mid-way through 1932, thus closely aligned with the Irish government's failure to make the mid-year annuities transfer. There were five modifications to the terms: (i) the coupon was cut to $3^1/_2$ percent, (ii) with three months' notice, the bonds could optionally be redeemed at par any time after 1 December 1952, (iii) the right to tender the issue to pay death duties was to lapse, (vi) the Depreciation Fund would cease to exist and (v) the name of the bond would change to $3^1/_2$ per cent War Loan (Wormell 2000).

[28] These policy actions had a noticeable effect on long-term UK government bond yields, in particular reducing

due to the default and subsequent guarantee. In the figure, the long-dashed red line represents the weighted average current yield on UK-backed land bonds while percentiles from the distribution of long-term UK government bonds are represented by the black line for the median and by the short-dashed grey line for the 75th percentile. The chart shows that the current yield on the UK-backed land bonds was above the range of UK government current yields before the Anglo-Irish Treaty. Although the current yield on the UK-backed land bonds fell somewhat after the treaty was signed, it remained at the upper end of the range of UK government current yields, consistent with continued uncertainty about the value of the UK guarantee. Once it became clear that the UK government would take responsibility for the payment of the UK-backed land bonds, the spread dropped below the median long-term UK government bond spread. This suggests that the decline in the yield on the UK guaranteed land bonds was a reaction to the default episode.

UK government policies may also affect the results through the weighted average UK bond yield. On one hand, uncertainty about the conversion of the War Loan may have kept the current yield elevated relative to other UK government bonds. On the other hand, anticipation of the conversion may have moved the yields on other UK debt in expectation that the fiscal burden on the UK government would fall. Our benchmark weighted average yield is a way to even out these opposing forces. However, as a robustness test, we repeated all the analysis above using only the current yield on the pre-war consol when computing the spread on land bonds to avoid underestimating the spread prior to the conversion of the war loan. While we do find evidence that the current yield on war loans was elevated relative to other benchmark UK government debt, we nevertheless find similar results for the timing of structural breaks.

Previous studies (Nevin 1963, Ó Gráda 1994) have focused on yield spreads between UK and Irish government bonds; in both cases excluding land bonds. In Nevin (1963)'s view the war loan conversion had a significant impact on yield spreads and that this 'was not paralleled by anything comparable in Ireland.' On the other hand, Ó Gráda (1994) argues instead that it was the coming to office of Fianna Fáil in February 1932 that spooked markets and pushed Irish flat yields up. We offer a nuanced view: the war loan conversion was certainly important to UK yields (and spreads based on them), but

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market interest rates and stimulating recovery by easing monetary policy.

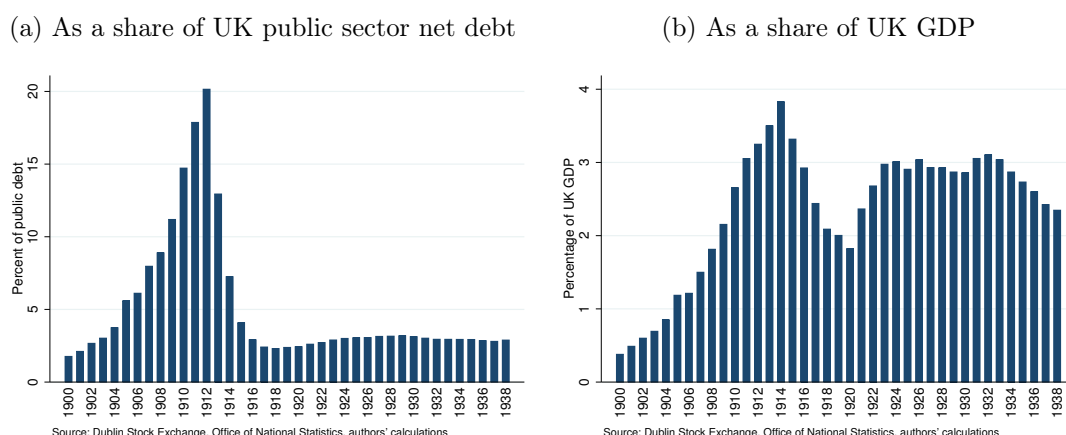Figure 4: UK government bonds and UK guaranteed land bonds current yields
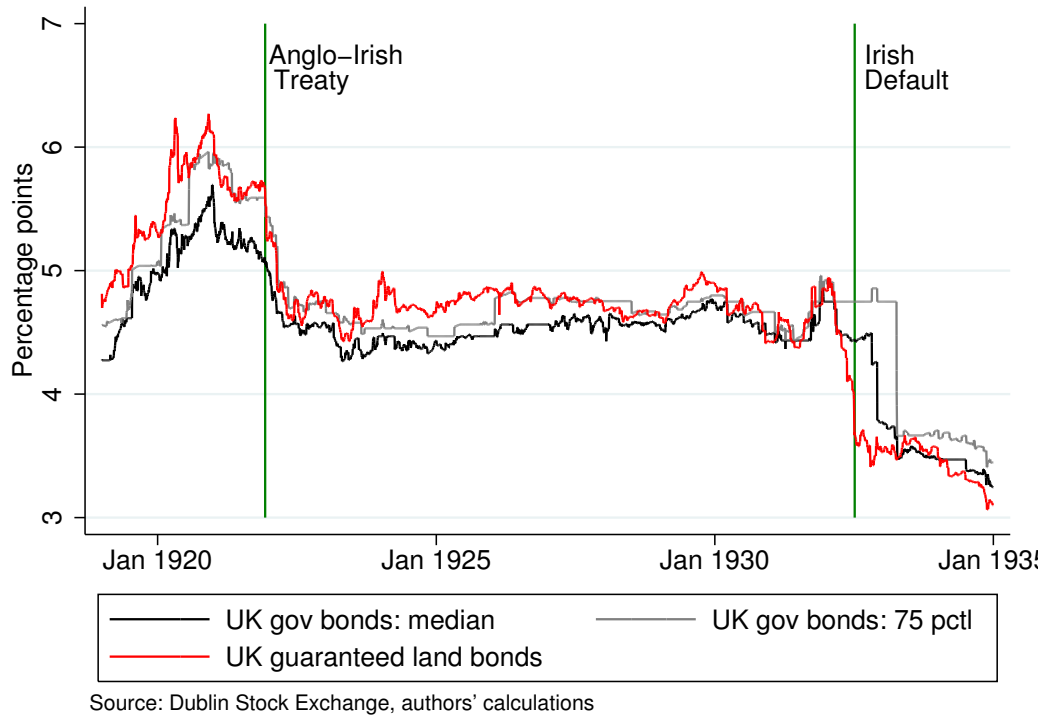
we cannot ignore the impact of Fianna Fáil policy on yield spreads.

3.4   Why did the UK not default on the land bonds?

A natural question arising from the default episode is why the UK did not lay the blame on the Irish government and default on the bondholders. There are at least five possible reasons for their decision not to default (of course, they are not mutually exclusive): (i) the bondholders were in the UK; (ii) the cost to repay the debt was not large; (iii) there were concerns about possible effects of a default on the conversion of the 5 percent War Loan; (iv) it was politically advantageous to pursue a trade war; and (v) the Irish government portrayed the land bonds as odious debt.

First, the UK government guaranteed land bonds were mostly held in the United Kingdom government-owned institutions (Foley-Fisher & McLaughlin 2014). The single largest holder of UK guaranteed land bonds was the Post Office Savings Bank, which held about 50 percent of the nominal outstanding at the time of the default. A further 5-10 percent was held by the National Insurance Fund. Thus, default on the bonds would have hurt the UK government institutions and UK bondholders at a time when the government

Figure 5: Outstanding UK-backed land bonds

(a) As a share of UK public sector net debt

(b) As a share of UK GDP

Source: Dublin Stock Exchange, Office of National Statistics, authors' calculations

Source: Dublin Stock Exchange, Office of National Statistics, authors' calculations

required their assistance to recover from the Great Depression.

Second, the bonds were not a significant cost to the UK Treasury. This was not always true, as shown in Figure 5a, when UK-backed land bonds accounted for over 20 percent of the public sector net debt in 1912. However, by the time of the default in 1932, massive war loans dominated the public debt so that land bonds accounted for less than 3 percent. The small cost of these land bonds can also be demonstrated by comparing the outstanding amount to the output of the UK economy as a whole, where the outstanding value of UK government guaranteed land bonds never rose above 4 percent of UK GDP even at the peak shown in Figure 5b.

Third, as mentioned earlier, the government was already engaged in the delicate process of negotiating a conversion of the UK war loan, considered a partial default because debt rescheduling involves a reduction in interest rates and creates illiquid assets.[29] This negotiation ran from mid-1931 to mid-1932 and the conversion was eventually implemented in December 1932. Crucially, a not insignificant amount of war bonds were held in Ireland (£40 million in Dublin and £20 million in Belfast (Wormell 2000, p.590)). In a memorandum on the UK securities held by Irish banks in 1922, it was argued that £100 m (or 55 percent) of the assets of Irish joint stock banks were held as UK securities of all types, including War loans and land bonds;[30] the Bank of

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[29]Reinhart & Rogoff (2009) do not include the UK in their list of external defaulters but do in their list of internal defaulters, mainly due to the War Loan conversion (Reinhart & Rogoff 2009, tables 6.6 & 7.3).

[30]The memorandum argued for a new financial system whereby all UK assets in Irish commercial banks be swapped for Irish Free State paper, all UK assets sold in New York and the proceeds used to buy gold. However this plan never materialised: 'Suggestions with regard to money invested in UK securities by Irish banks', NAI, Department of Finance, Fin1/1335

Ireland had the largest share of its assets invested in UK government securities. Any group of investors that held both war bonds and land bonds might disrupt the war bond negotiations if they felt aggrieved by a default on their holdings of land bonds.

Fourth, the ISC minutes show that the UK cabinet was aware of the internal political situation in Ireland and hoped that a trade war would inflict electoral losses on Fianna Fáil and see a return to power of Cumann na nGael; the main opposition party and in government from 1922-1932.[31] However, it was not until Fianna Fáil returned to power with a stronger mandate in 1933 that negotiations between both parties began in earnest. These negotiations were fruitful, resulting first in a quota agreement on coal and cattle in 1934 and ultimately to a settlement to the dispute in 1938.

Fifth, Fianna Fáil's campaign had emphasised the burden borne by Irish farmers from the land annuities. Once in power, the government argued in part that since the debt was a consequence of actions taken by the UK government, it was odious (B.P.P. 1931-32*b*).[32] Athough the original terms of the debt were generous relative to market alternatives, the election gave the government a mandate for repudiation and a platform for publicising their argument. Amid this negative publicity, the UK government would struggle to pass responsibility for a default onto the Irish government.

Facing all the issues described above, the UK government was likely unwilling to pass the Irish default onto the bondholders. Consistent with the early signals of the UK government and the movement of the spread on UK-backed land bonds, the combination of so many factors made it relatively clear that the UK government would not allow bondholder losses. However, as we discuss below, the government did not always take this approach with Commonwealth nations.

4   Concluding remarks

Recent events in Scotland, Ukraine, and Spain have raised questions about the implications of state breakup for related sovereign debt markets. As noted by Moody's (2014), there have been only a few sovereign breakups since 1983 that might help to answer

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[31]For example, the Chancellor of the Exchequer stated that 'If action was not taken before it would have to be taken at the Ottawa Conference and surely it would be most unwise to allow the situation to drift and most unfair to Mr. Cosgrove's Party and also to Mr. de Valera's Government not to give the latter now a very grave warning of the consequences of the procedure which they had adopted.',(ISC (32) 27), 9 May 1932.

[32] For a discussion of the history of legal issues and politics of odious debt, see Feinerman (2007) and Rasmussen (2007).

such questions. Moreover, lessons from those breakups cannot easily be applied to recent events. In the majority of cases, breakups have been between less-developed countries that are not well-integrated with international financial markets.[33] Thus caution is warranted when trying to extrapolate from these recent cases to the potential consequences of breakup in modern developed economies.

Although further back in time, arguably the breakup of the UK and the formation of the Irish Free State at the beginning of the twentieth century provides a more appropriate case for comparison with the potential consequences of breakup in modern developed economies. Ireland was comparable, albeit behind, developed European economies and was well-known to international financial markets. Moreover, the independence and default episode in Ireland/UK has shared characteristics and the same legal background as issues surrounding Scotland/UK and many of the same discussions concerning debt inheritance have appeared in Catalonia/Spain. In broad terms, Ireland defaulted on an intergovernmental agreement related to sovereign obligations placed on international markets by a larger state. This characterisation is similar to the position of the Ukraine in respect of their $3 billion eurobond debt to Russia.[34]

Within the Commonwealth itself, the Irish story is particularly interesting to contrast with the contemporaneous case of Newfoundland which defaulted on its obligations in 1932. Newfoundland, in contrast to Ireland, was fiscally profligate with a mounting debt. The debt outstanding for both polities was similar (at that time the Irish Free State was responsible for about £80 million worth of land bonds) but the ratio of debt-to-revenue was just over 11 in Newfoundland compared to about 3 in Ireland (Reinhart & Rogoff 2009, pp 81-83). Facing such an enormous burden, a Newfoundland default became likely as soon as it was forced to borrow to cover interest payments.

Although Newfoundland and Ireland shared certain similarities, the UK government's reaction to their individual prospects of default was quite different. In characterising the UK response to the looming default by Newfoundland, MacKay (1934) noted that 'default would be odious and might impair the credit of other UK Dominions.' Newfoundland was forced to resort to aid from the UK on condition that it 'voluntarily reverted to the status of a crown colony' and gave up its status of a self-governing Dominion under the

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[33] See Table 1.1 of Moody's (2014). In the cases of breakup in larger and more developed economies (USSR, Yugoslavia, Czechoslovakia), their use of international financial markets was limited.

[34] `http://www.reuters.com/article/2014/06/19/ukraine-crisis-debt-idUSL2N0P00TM20140619`

Statute of Westminster (MacKay 1934, p.895). By contrast, the UK reaction to the Irish default was not to revert Ireland to the status of colony but rather it was to impose economic sanctions in the form of tariffs on Ireland's principal exports to the UK.

Why did the UK government choose different reactions in the separate default cases? An obvious difference was that the Irish Free State had not defaulted on its own sovereign obligations.[35] Rather, the Irish Free State had defaulted on an inter-governmental agreement related to debts that had pre-dated the Irish Free State, and could thus be portrayed by the Irish government as odious. In the case of Newfoundland, the debts, although also guaranteed by the UK, were incurred by the government of the Dominion itself and thus could not be characterised as odious. Defaulting on such a large debt burden demonstrated that the Dominion itself was financially unstable. The UK government was able to use Newfoundland's need of a bailout as leverage eventually forcing it into confederation with Canada.

For modern-day sovereign states with regions that are contemplating secession, the main lesson from our historical study is that uncertainty regarding the distribution of fiscal liabilities may persist until the mechanics of the arrangements are amply demonstrated to market participants. Consistent with persistent uncertainty, market participants will likely expect compensation in the form of a yield premium. Thus, uncertainty about fiscal responsibility may raise the cost of borrowing for many years after secession occurs.

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[35] The government did not default on the land bonds that had been issued after independence (even though one had been co-guaranteed by the UK government) and it did not default on the various National Loans that were mostly held domestically (Thomas 1986).

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