How Did Europe Democratize? Views from the Sovereign Bond Market*

Aditya Dasgupta[†] & Daniel Ziblatt[‡]

October 15, 2011

*Paper written for Workshop "Historical Political and Economic Development in Western Europe: Recent Advances in Comparative Politics", Juan March Institute, Madrid, Spain, October 21-22, 2011

[†]Aditya Dasgupta is a PhD student in the Department of Government, Harvard University (dasgupta@fas.harvard.edu)

[‡]Daniel Ziblatt is Professor of Government in the Department of Government, Harvard University (dziblatt@fas.harvard.edu)

1. Introduction

How did democracy come to Europe? There may now be a consensus that the process was violent, often murderous, and by no means inevitable. Yet the question remains: how was democracy actually achieved? One the one hand, some scholars, citing important historical cases, plausibly argue that democratic reforms came over the course of the nineteenth and early twentieth centuries at the hands of insurgent "outs," with elites making concessions only because at pivotal moments they were fearful of mass unrest and the threat of revolution (e.g. Acemoglu and Robinson, 2006). On the other hand, careful historical work has also made clear that major democratic reforms were at times accomplished with little pressure "from below". In this view, ambitious, far-sighted, and competing politicians granted democratic reforms as a means not of taming unrest but of solidifying coalitions in elite political battles over power and policy (e.g. Collier, 1999; Lizzeri and Persico, 2004).

How are we to make sense of these two contradictory perspectives? This paper contributes to the recent literature on the political economy of Europe's historical democratization (Boix, 2003; Iversen and Soskice, 2011; Capoccia and Ziblatt, 2010; Ziblatt, 2006) by elaborating the distinction between two different theories of democratization and then by examining some new evidence in light of these theories. One theoretical challenge for political scientists studying the topic is to understand long-run patterns of democratic stability. However, here we ask the narrower but crucial empirical question of what prompted the inauguration of major democratic reforms in the first place.

We introduce a new type of evidence to this debate: monthly historical sovereign bond yield data from nine countries: Austria, Belgium, Britain, Denmark, Germany, Italy, Netherlands, Norway and Sweden over the course of the nineteenth century (1800-1910). Using these historical data (from the Global Financial Database) as well as assessments found in historical collections of the *The Economist* magazine and *The Investor's Monthly Manual*, we can reconstruct whether capital holders (i.e. the wealthy) actually perceived risk, uncertainty, and arguably even the possibility of revolution in political events leading up to major moments of suffrage and democratic reform over the course of the entire nineteenth and early twentieth centuries. In particular, by applying these data in systematic ways for the first time to this important debate, we can shed new light on the following types of questions: Did capital holders actually fear revolution before major moments of democratic reform? Was this fear tamed by the passage of democratic reforms? Did the fear of revolution vary across cases? Did it vary over time? By answering these questions, we come to findings that both reconcile and challenge existing arguments about the role of revolution in democratization and the causes of democratization more generally.

We proceed in the following steps. First, we present the two competing views and discuss the problems of evidence that have plagued the current debate. Next, we present our research design and the data we use. Finally, we present and discuss our findings.

2. The Debate: Threat of Revolution and Democracy

If democracy was not an inevitable and painless outgrowth of Europe's modernization, this raises the puzzle of how and why old elites were willing to concede power that would appear to undercut their power, wealth and prestige. Why would an elite with a monopoly on political power dilute this power, whether through the expansion of the suffrage or other democratic institutional reforms? Often drawing on different cases but sometimes oddly even the *same* historical cases, two contradictory answers are present in the literature.

The first view suggests that mass suffrage and democratization more generally were both forced upon resistant old regime actors who only did so because they faced the prospect of ongoing unrest or even deeper revolutionary change (Therborn, 1979; Acemoglu and Robinson, 2006; Przeworski, 2009, Aidt and Jensen, 2011). From this perspective, it is not the socially-transformative effect of violent revolution, by eliminating hierarchies or concentrations of wealth, that causes democratization (cf. Moore, 1966; Tilly, 2007). Rather, it is that agitation, unrest, and, the mere threat of revolution alters the calculations of old regime incumbents as well as capital-holders more generally, frightening them with the prospect of disruptive tumult, the possibility of unconstrained expropriation, and, at the very least, extreme political uncertainty. Old regime elites (whether economic or political) may recalculate the desirability of the range of political regime options facing them. Though a nondemocratic status quo may ultimately be preferable, the imminent threat of revolution alters the relative appeals of democracy, leaving democratic institutional reforms a newly preferred path forward. In the words of the Weimar Germany jurist Hugo Preuss as he sought to convince recalcitrant German conservatives to embrace Woodrow Wilson's vision of a democratic Europe in the shadow of the Russian Revolution, "Either Wilson or Lenin...one must choose" (cited by Mazower, 2004).

This particular "revolutionary threat" logic as the driving force of democratization has recently been elaborated in many works, including Acemoglu and Robinson (2006) and Przeworski (2009). Here, political democratization is analyzed as a standoff between "an elite" and "the masses" and is explained as an outgrowth of revolutionary challenges that are sufficiently credible to alter the elites strategies for incumbent survival.[1] Przeworski (2009) elaborates the point even further, asserting that we can know that "democratization by conquest" (i.e. via mass mobilization or revolutionary threat) has occurred if the active minority of the incumbent regime is worse off than it was in the status quo ex ante, though obviously better off than they would have been had their been a revolution.[2]

[1]It is worth noting here that how the collective political actors in these theoretical accounts are conceptualized (e.g. "elites," "masses," "politicians," "incumbents") is itself not an inconsequential choice that appears not only to structure the theories that follow but that escapes self-conscious discussion in any of the accounts that follow.

[2]This claim is intuitively plausible but poses several ambiguities in terms of a) who should count as the "elite," — Politicians? Economic actors? Authoritarian incumbents? b) along what dimensions (power, wealth, prestige) one should assess whether this "elite" is better off or not? and c) what time frame one uses

Because these sorts of theoretical arguments are often so aptly captured by the statements of nineteenth century politicians themselves, social scientist attempting to make this argument are keen to cite precisely these kinds of sources to illustrate their arguments. For example, Whig leader Earl Grey's public defense of the 1832 Reform Act in Britain is one favored quotation, "The principal of my Reform is to prevent the necessity of revolution. I am reforming to preserve, not to overthrow."[3] Similarly, the slogan of conservative Republicans after the French Revolution also makes the same point: "universal suffrage closes the age of revolution (Hirschman, 1982 [2002], p. 113)".

Despite the apparent parsimonious power of these arguments, another strand of scholarship has cast a deeply skeptical eye both on the self-justifying arguments of politicians such as Earl Grey as well as the idea that unrest from below is the driver of suffrage reform and other democratic changes. The political scientist E.E. Schattschneider (1942) is particularly biting in his criticism,

> "To assert that an indignant people wrestled the right to vote from a reluctant government is a humorous inversion of the truth, an invention of persuasive politicians who sold the fable to the historians."

From this view, democratization is not conceived as a battle of "incumbent elites" and "masses" nor did it come when elites were exposed to revolutionary threat. Instead, democratization is about politicians building coalitions to pursue their own policy agendas (Lizzeri and Persico, 2004; Llavador and Oxoby, 2005) or their own partisan interests (Collier, 1999; Ziblatt, 2008). In particular, democratic reforms, that have the immediate effect of "expanding the scope" of political conflict (Schattschneider, 1942) are most usefully viewed as a byproduct of politicians seeking to outmaneuver their *equally-elite* political rivals. In this

to assess this.

[3]The literature on the 1832 Reform Act is vast. A recent and useful interpretation is Bruce Morison, "Channeling the Restless Spirit of Innovation *World Politics* (October 2011).

view, democratic reforms emerged historically either, a) as a technique of building new coalitions when politicians were squared off against their opponents in stalemated policy conflict (Lizzeri and Persico, 2004; Llavador and Oxoby, 2005; Iversen and Soskice, 2011), or when b) politicians discovered suffrage reform as a technique of finding an electoral edge in partisan competition (Collier, 1999; Himmelfarb, 1967). From this view, politicians may negotiate new institutional rules while scenes of unrest occur, but such mass mobilization "from below" is far from decisive. The impetus for reform, instead, comes from politicians seeking to improve their position in absolute terms vis-a-vis the status quo ex ante. Again, Przeworski (2009) is helpful here: unlike the scenario in which democracy is "conquered," leaving "incumbent elites" worse off than the were before reform, we know that democracy has been voluntarily "granted" if the incumbent elite is actually better off than it was previously.[4]

As we can see, even if authors disagree about who matters more (incumbent elites? modern politicians?), it is clear that elaborate arguments have certainly been mustered on both sides of this important debate. Yet, the question remains: how does the evidence look? Here we discover the core problem in this debate. Given the sophistication of the arguments, the empirical foundations of all "threat of revolution" arguments of democratization are remarkably shaky. Indeed, it appears that scholars working on the topic are all hampered by a broader dilemma that mars all efforts to reconstruct political actors' perceptions of threat (see Jervis, 1977).

On the one hand, since we are dealing with subjective perceptions, scholars understandably focus their attention on parliamentary debates where politicians make public pronouncements (e.g. Earl Grey in 1831) that ostensibly explain what they perceive, and how they explain why they behave as they do. These accounts certainly have the benefit of attempting to stay close to what important political actors *claim* they perceived. However, this

[4] Again the empirical question of how one would know this is a difficult one. See discussion in footnote #2

strength is also a problem. Politicians are of course highly strategic creatures, whose public utterances are often intended to speak to multiple audiences, are intended to shape opinion, and therefore while often highly illustrative, have the pitfall of being extremely unreliable as a basis for systematically reconstructing, let alone testing, what people really thought about political events.

On the other hand, other scholars frustrated by these shortcomings turn to various forms of "event data" to provide a more objective baseline against which to measure "the threat of revolution." The richest examples of such analyses typically come in narrative form, drawing on the work of historians in order to describe, in close detail, how particular episodes of suffrage reform or democratization unfolded. Such works typically focus on carefully-selected suffrage reform episodes that, however, run the risk of appearing to have been selected to support the favored argument. For example, advocates of the "mass mobilization" perspective in British political history appear drawn to the 1832 Reform Act that is then often described as the "paradigmatic" democratic reform, citing evidence and historians who suggest that mass mobilization was substantial and decisive prior to the passage of the Act (e.g. Acemoglu and Robinson, 2005; Morrison, 2011). By contrast, those who emphasize the role of partisan elites, and who seek to diminish the role of revolutionary tumult, tend to devalue the "democratic" value of the 1832 Reform Act and focus instead on the later 1867 or 1884 Reform Acts, where historians, and some evidence, indeed tell us mass mobilization appears to have been less important (e.g. Collier, 1999). Both sets of analyses are useful on their own; but the cumulative insight gained by these different accounts is less certain.

Also, even more puzzlingly, in the same vein, other works often analyze the same pre-suffrage events of mass mobilization as evidence of explicitly contradictory theories. For example, many accounts point to the Hyde Park riots of 1867 as the key point triggering suffrage reform in Britain, making the prospects of revolution very real for British politicians (e.g. Harrison, 1965). On the other hand, more skeptical historians have argued that the events in Hyde Park in 1867 merely involved "the trampling of some flower beds" (Walton, 1987, p. 14) and that no one seriously viewed these events as suggesting the onset of revolutions (see, Cowling, 1967).

These ambiguities have led other scholars to try develop more systematic event-centered analyses. Two recent examples can illustrate the promise and pitfalls of this approach. Przeworski (2009), focusing on the post-World War I era, uses Banks' (1996) remarkably rich dataset that gives every independent country back to the beginning of the twentieth century an annual score that is the sum of all strikes, demonstrations, and riots that the coders found for each country. When using this "objective" measure of unrest, Przeworski (2009) finds that unrest increases the chances of certain kinds of suffrage reform in the twentieth century. Aidt and Jensen (2011) conduct a similar analysis, coding "revolutionary events" based on secondary sources and *Encyclopedia Britannica* to analyze an earlier period, coming to similar conclusions.[5]

Both of these works are to be applauded for attempting to develop more systematic or "objective" evidence of unrest, providing us with a firmer grounding for theories of democratization. The difficulty is that what these data arguably gain in objectivity, they lose in subjectivity. That is, by attempting to measure *actual* unrest rather than *perception* of unrest, such event-history data runs the a risk of two different types of measurement error: 1) what may appear to social scientific coders as important scenes of historical mass mobilization might not have actually been perceived as revolutionary by capital-holders at the time; and 2) contemporary coders may code some historical events as not appearing "revolutionary" while capital holders may have perceived these moments as deeply threatening.

Whether or not actual unrest occurred, it is crucial to remember that arguments about the "threat of revolution" that sit at the center of the literature on the causes of democratization

[5]Aidt and Jensen (2011) seek to measure not only "national" events but "neighborhood events" (within the same supranational region) that might have been perceived by elites in other countries. See discussion, p. 3

hinge above all on elite perception of revolutionary threat. If we could develop a research design that could both be as systematic as the event-history analysis presented above but that could also move us even closer to the actual preferences and perceptions of politicians, incumbent elites, and capital-holders (in the way analyses of politicians' speeches attempt to do), we would move a far way in helping us to understand the broader question of what prompted major moments of democratic change in Europe.

In the following we lay out a research design we believe moves us precisely in this direction.

3. Research Design

We propose examining sovereign bond yields during major country episodes of democratization in Europe to assess both the perceived threat of revolution and the perceived effect of democratic reform during these episodes. We are interested in two questions: First, do historical sovereign debt markets suggest any indication of "threat of revolution" immediately prior to significant moments of democratization? Second, what do sovereign debt markets indicate about the impact of the passage of democratic reform on investors' perception of revolutionary unrest? As should be clear, our source material differs considerably from that utilized in conventional historical studies of European democratization. Rather than indirectly trying to assess perceptions (by looking at speeches or incidence of unrest) we look directly at how capital holders viewed political events.

What exactly might bond yields tell us about revolution and democratic reform in Europe? And why might looking at bond yields improve upon the traditional historical approach? Sovereign bond yields are a good indicator for the perceived threat of revolution for several reasons. As Ferguson (2006, p. 77) notes, bond yields represent "the 'pure' or real rate of interest (which is equivalent to the marginal efficiency of capital in the economy) plus a premium for uncertainty that takes into account first the risk of default by the borrower and, second, the lender's expectations of inflation and/or depreciation in the currency". Accordingly, bond yields should increase sharply in response to perceptions of a growing threat of revolution, associated with the specter of regime change and debt default. We additionally would expect perceptions of a growing threat of revolution to result in increasing bond yields because of the associated increasing perceived probability of inflationary government policies (such as printing money, issuing new bonds) induced by fiscal deficits arising from social turbulence.

There is considerable empirical evidence that nineteenth century European financial markets reacted strongly to news of revolution, possible or actual, during the nineteenth century. The French Revolution, for example, resulted in panic and widespread capital flight from Paris to London. In Britain, news of the American Revolution and of the French Revolution each threw the London Stock Exchange into a panic (Neal, 1990, p. 171). Political regime changes during the nineteenth century often resulted in repudiation by the new regime of 'odious' debt accumulated by their predecessors (Reinhart and Rogoff, 2003). The negative reaction of financial markets to the threat of revolution therefore appears to have been grounded in reasonable fears.

Looking at bond yields will therefore allow us to assess whether there existed historically a genuine perception of a revolutionary threat prior to democratization. It will also allow us assess how democratization itself was perceived. If democratization was viewed as an effective resolution to the threat of revolution, we should see a return of bond yields to normal levels as democratization approached and/or once democratization occurred. On the other hand, if democratization was not viewed as a resolution to the threat of unrest and revolution — either because it was not efficacious or because there was no serious revolutionary threat to resolve in the first place — then the passage of democratic reform should have had little substantial effect on bond yields.

The overall research design must reckon with the theory of rational expectations, that investors impound their expectations about the future into their present valuation of an asset, in our case, sovereign bonds. We do not therefore expect fluctuations in bond yields to coincide exactly with the timing and scale of a revolutionary threat or with the occurrence of democratization, which were to some extent predictable in advance and therefore had presumably in part already been incorporated into sovereign bond yields. Yet the sequence of events leading to democratization *was* in many cases highly unpredictable, and therefore it seems reasonable to believe that investors updated their beliefs as events unfolded — allowing us to gain insight into their perceptions by examining the response of the sovereign bond market to major episodes of democratization.

As described above, our empirical strategy improves upon conventional historical approaches because, unlike existing approaches, it gets at *revealed preferences* and perceptions during major episodes of democratization. Historians, especially those who study political thought (Skinner 1969), have long noted the difficult challenge that reconstructing the thoughts and perceptions of historical actors poses to the present day researcher. This is especially true of politically contested historical processes such as democratization, where it is difficult ascertain the sincerity of political statements made by the historical protagonists, often politicians, involved in these processes.

As we have noted, the response of historians and other social scientists to this challenge has been to engage in detailed historical research to uncover what "really" went on — an endeavor we fully support. A novel alternative approach, however, which has been pioneered in economics, is to look at data that is likely more accurately to reveal perceptions. Asset prices are typically a good choice of data because buyers and sellers, unlike politicians, must "put their money where their perceptions are". Willard et al. (1996), for example, attempt to identify important turning points in the US Civil War by looking fluctuations in the price of the "greenback", a currency issued by the Union states; they find that some apparently important turning points in the war have been neglected by historians while the importance of other events has been overstated. Fisman (2001) attempts to identify the importance of political connections of firms in Indonesia by looking at the response of stock prices of firms linked to the Suharto regime to reports of Suharto's health problems.

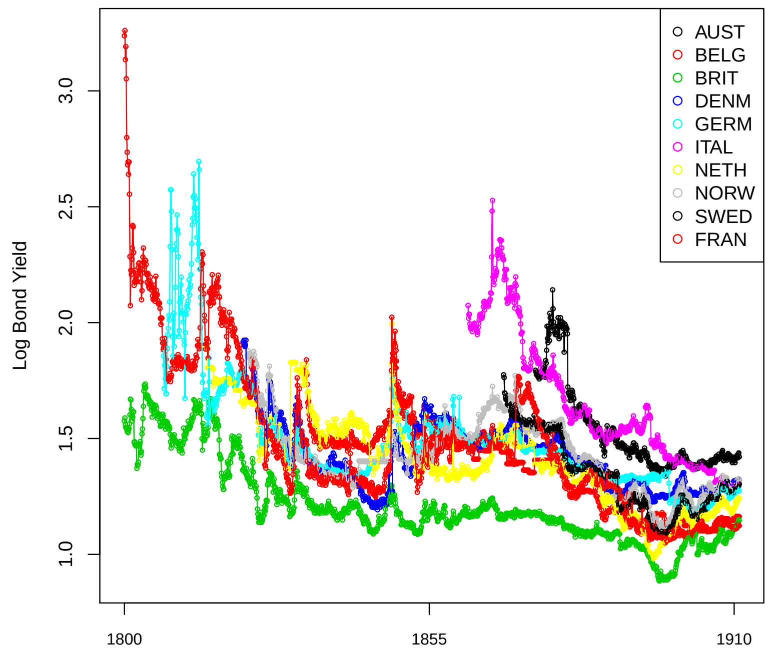
We adopt a similar approach to our question of interest, treating the yield on European sovereign bonds traded during the nineteenth century as an accurate indicator of perceptions of major episodes of democratization. This indicator will allow us to adjudicate between competing theories of European democratization in a debate that has proven remarkably difficult to resolve empirically using conventional approaches.

4. Data and Empirical Analysis

Our analysis relies on monthly data on sovereign bond yields, defined as the annual coupon paid to investors on the bond amount divided by the bond's secondary selling price, for Austria, Belgium, Britain, Denmark, Germany, Italy, Netherlands, Norway and Sweden for most (depending on the country) of the nineteenth century (compiled by the Global Financial Database from a range of sources, such as monthly issues of *The Economist*). Since the coupon on sovereign bonds, such as the British 3% consol, was typically fixed, most of the short run fluctuation in bond yields is driven by changes in their secondary selling price. Like the many economic historians who have used this data (e.g., Obstfeld and Taylor 2004), we are unable to adjust perfectly for the maturation date of sovereign bonds. Yet, as we will discuss, the short time frame over which we analyze fluctuations in bond yields mitigates these concerns about measurement error. In Figure 1, we display the log of sovereign bond yields over the nineteenth century for these countries. In our subsequent analysis we work with log of bond yield de-meaned by country-specific splines of time in order to account for obvious temporal trends.[6]

[6]This is not crucial to any of our findings, however.

Figure 1: Country Bond Yields Over Time



For each of the countries, we qualitatively identify "major" instances of democratic institutional reform, such as the thee Great Reform Acts (1832, 1867, 1884) in Britain, and note the month and year in which each reform occurred, using a range of sources, but relying mainly on the detailed data handbook by Caramani (1999). The resulting compilation of "major" episodes of nineteenth century European democratization, dropping those for which we do not have bond yield data, is listed below in Table 1.[7]

As we have discussed, we expect bond yields to follow a decidedly non-linear pattern in the case of episodes of democratization driven by the threat of revolution. We expect

[7]It should be noted that since the aim of our study is to assess the perceived threat of revolution in cases of democratization where this may be unclear to the present day researcher, we exclude from the list episodes of democratization in France, Spain and Portugal that did in fact occur as a result of an actual revolution. Including these episodes in our coding does not, however, substantially alter our results; bond yields during these episodes, such as the February Revolution of 1848 in France, typically rise dramatically before gradually declining, though not to pre-crisis levels

Table 1: Episodes of Democratization

	Country	Year	Month
1	AUSTRIA	1848	4
2	AUSTRIA	1896	6
3	BELGIUM	1848	3
4	BELGIUM	1893	9
5	BRITAIN	1832	5
6	BRITAIN	1867	11
7	BRITAIN	1884	11
8	DENMARK	1849	6
9	GERMANY	1848	4
10	GERMANY	1871	4
11	ITALY	1861	2
12	ITALY	1882	6
13	NETHERLANDS	1814	3
14	NETHERLANDS	1848	11
15	NETHERLANDS	1887	11
16	NETHERLANDS	1896	9
17	NORWAY	1814	5
18	NORWAY	1884	7
19	NORWAY	1898	4
20	SWEDEN	1866	6
21	SWEDEN	1909	6

bond yields to rise initially as the perceived threat of revolution increases but to decline with the passage of democratic reform. On the other hand, it is entirely possible that bond yields remain relatively flat during major episodes of democratization, suggesting that there existed little perceived threat of revolution. It seems therefore to make more sense to estimate a generalized additive model (GAM) than to estimate an ordinary least squares (OLS) regression, which must specify a functional form in advance. GAMs, which allow the relationship between the explanatory and outcome variables to take a flexible, smooth functional form, are the 'semi-parametric' equivalent of generalized linear models (GLM), including OLS. We estimate a model of the form,

$$y_{i,t} = \tau_i + f(x_{i,t}) + \varepsilon_{i,t} \tag{1}$$

$$\varepsilon_{i,t} = \rho\varepsilon_{i,t-1} + u_{i,t} \tag{2}$$

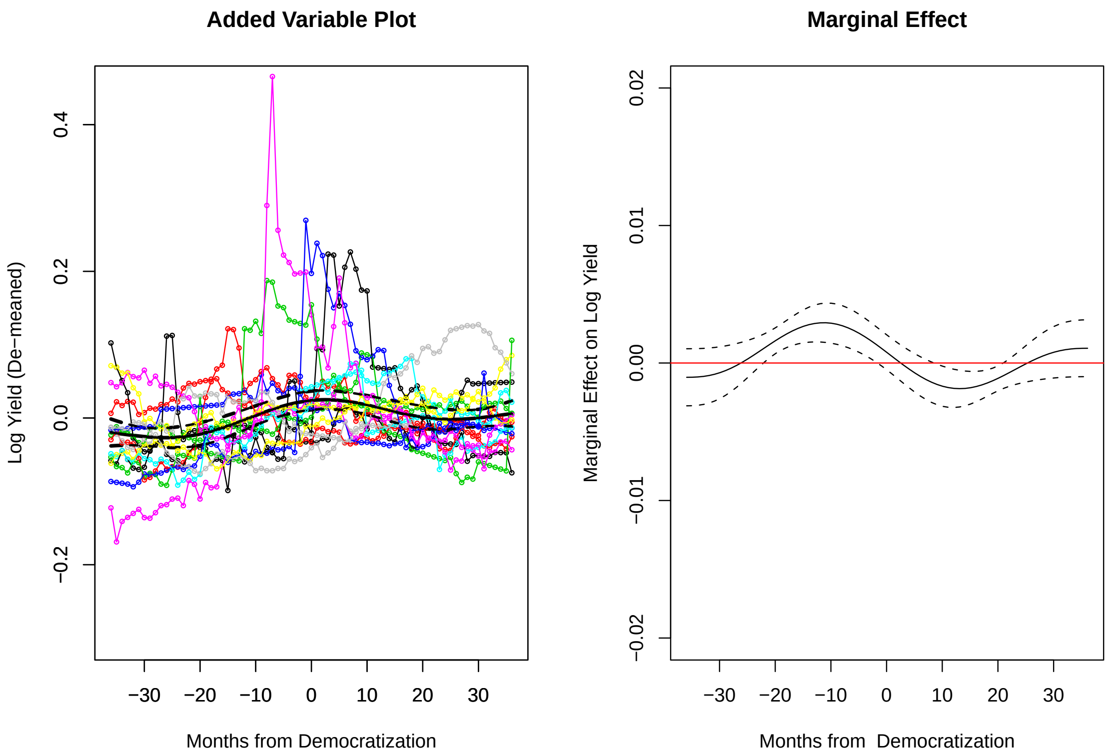
$$u_{i,t} \sim N(0, \sigma^2) \tag{3}$$

where $x_{i,t}$ represents the time in months (from -36 to 36) from democratization (which occurs in month 0) in the case of country democratic episode i and at time t and the outcome variable $y_{i,t}$ represents log of bond yield in the case of country democratic episode i at time t. In this specification, the empirical sample includes only the 73 month windows around each country democratic reform. The 'episode fixed effect' τ_i is vector of dummy variables, one for country episode of democratization to control for time-invariant omitted variables within each 73 month period. The function $f(\cdot)$ is a smooth 'penalized spline' function, with five 'knot-points' specified. The model also assumes an AR(1) normal distribution of errors; in other words, within each 73 month window the error in any single month is assumed to be normally distributed and correlated only with last's. A partial auto-correlation plot (not reported) suggests that this auto-correlation structure is appropriate to assume. The model estimates, which are non-trivial to compute, are calculated within the *mgcv* package in R.

Because GAM point estimates are difficult to interpret, we report the model estimates in the form of an added variable plot (including residuals) of the estimated effect of time to democratization on log of bond yields. We also present a marginal effect plot of time to democratization on log of bond yields. Both plots, in Figure 2, include 95% confidence intervals:

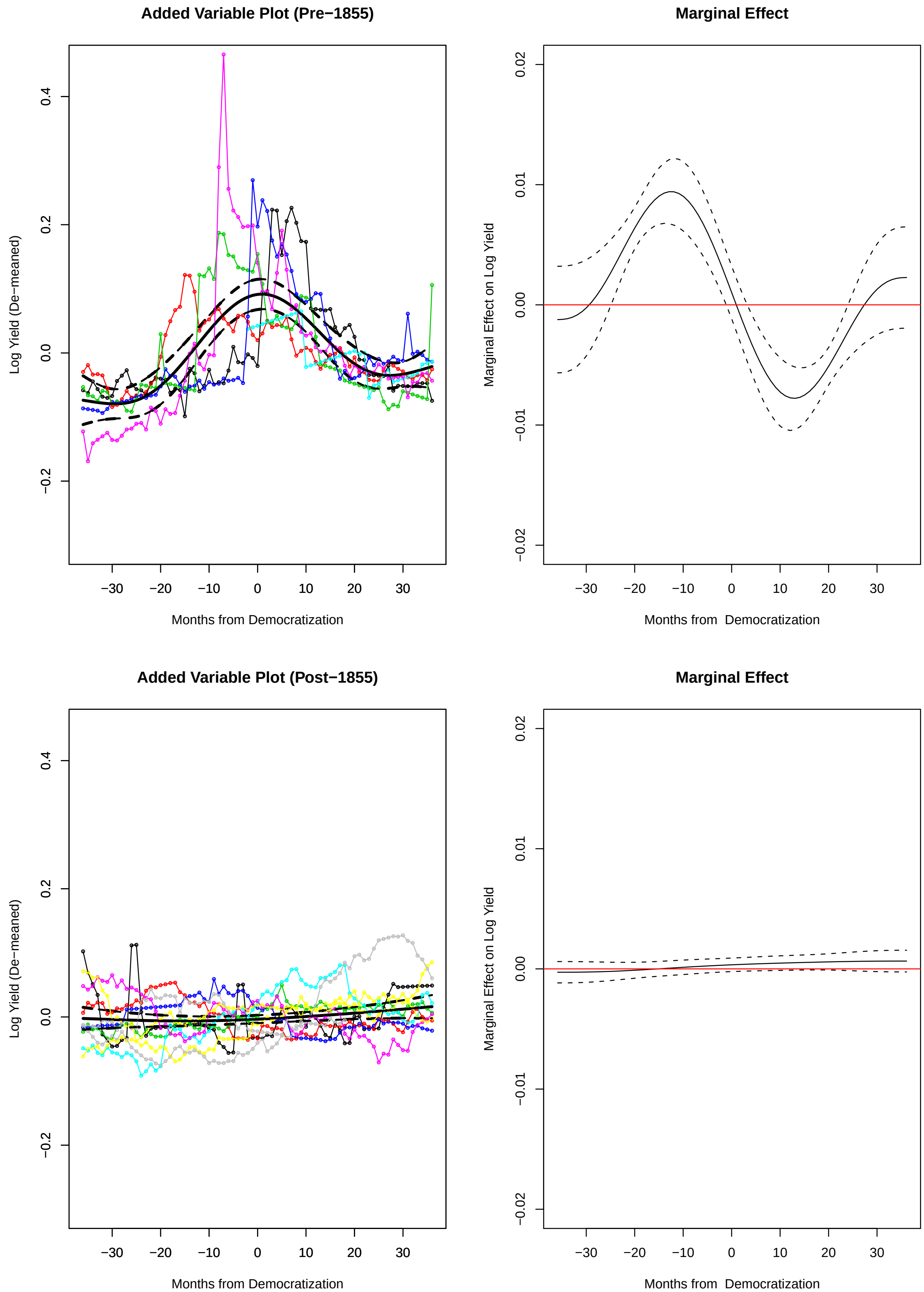
This analysis, which 'pools' data from across country episodes of democratization, appears to provide considerable support for the revolutionary threat hypothesis. Yields rise sharply before declining with the passage of democratization, returning to pre-crisis levels

Figure 2: Pooled Analysis



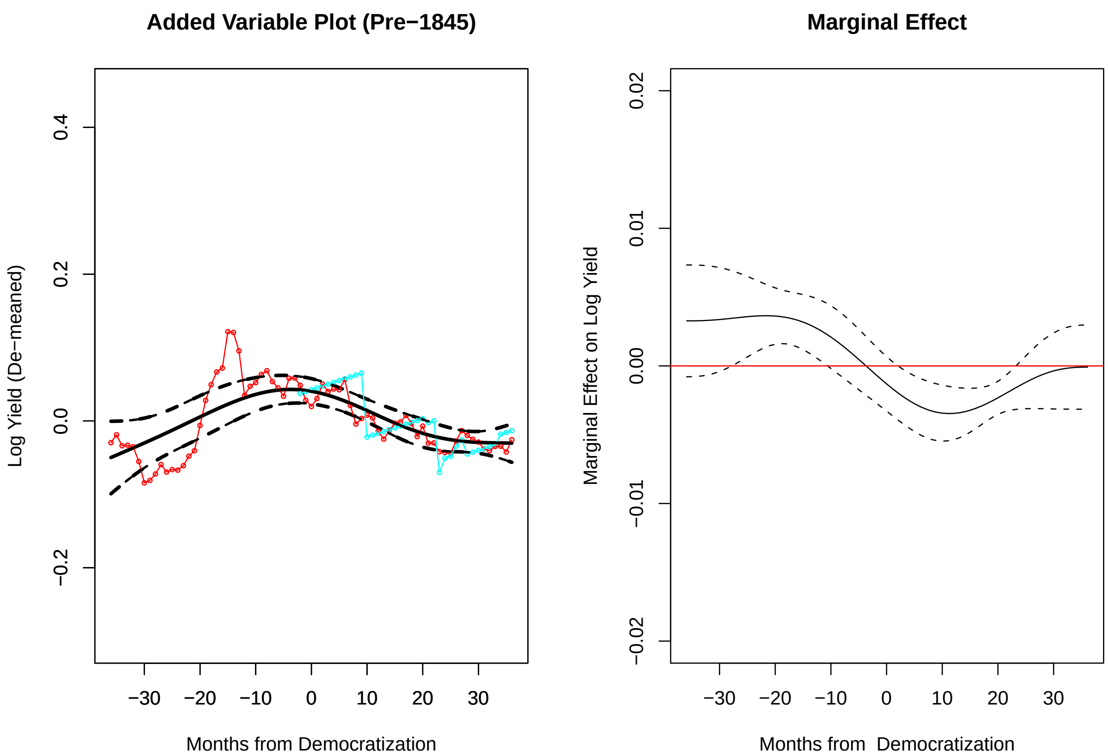
shortly thereafter. This pattern appears to be statistically significant at the 95% confidence level. There is one important caveat we must emphasize from these findings: the pattern appears clearly to vary across country episodes of democratization. Inspecting the data more closely, we find that a major component of this variation is *time*. Strikingly, we discover, as summarized in Figure 3 below, country episodes of democratic reform which occurred during the first half of the nineteenth century appeared to be associated with systematically greater volatility in bond yields than those which occurred in the second half:

Figure 3: Pre- and Post-1855 Analyses



One might suspect that the variation is driven mainly by the so-called "year of revolution", 1848. Many of our pre-1855 democratic episodes do come from that period. Yet, as Figure 4 below illustrates, excluding democratic episodes that occurred around 1848 produces similar results:

Figure 4: Pre-1845 Analysis



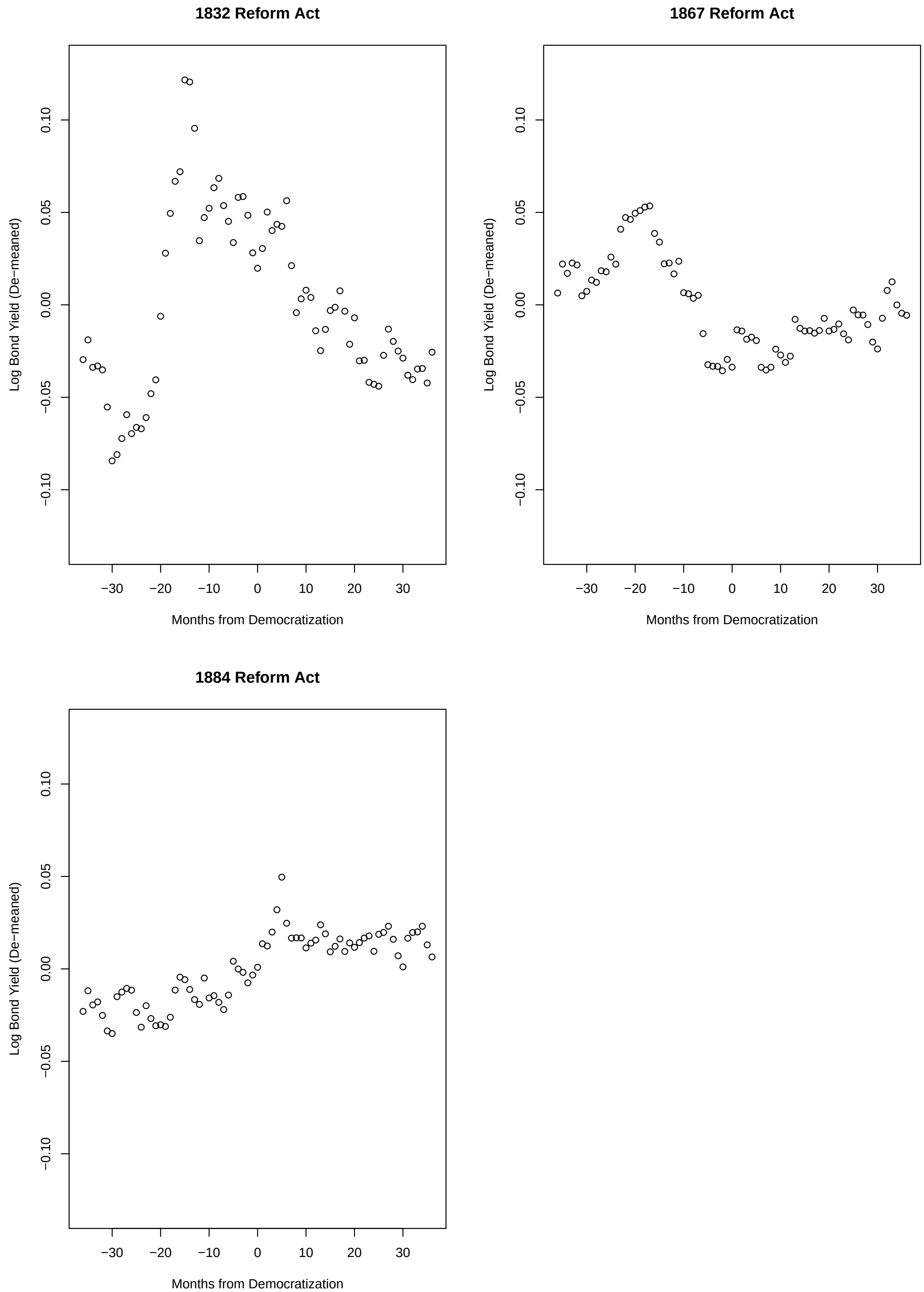
5. Discussion

How do we make sense of these findings? First, the evidence suggests that immediately prior to major episodes of national democratization in nineteenth century Europe, investors demanded greater premiums when buying sovereign debt. Furthermore, the premiums demanded were immediately reduced with the actual passage of democratic reforms. This suggests support for the thesis that investors or capital-holders (i.e. the wealthy) did indeed perceive political uncertainty and even possibly threats of revolution immediately prior to major episodes of democratization. Our findings, while confirming existing theories in this regard, provides a much firmer empirical foundation than existing literature. Given that it is above all elite perception of unrest (and not unrest itself) that is the hinge of our major theories that link "threat of unrest" to democratization, our analysis offers, as far as we know, the first direct evidence of this thesis. When elites perceived political uncertainty during the nineteenth century, this often led to major episodes of democratization.

In addition to this point, however, a notable secondary finding of our empirical analysis departs from existing literature: there exists significant heterogeneity in the reactions of sovereign bond markets across country-episodes of democratization. It appears that during many democratization episodes, bond yields followed the overall pattern we observe in the pooled analysis: a sharp rise, followed by a decline with the passage of democratic reform. Yet during many episodes, bond yields remained relatively unperturbed throughout.

It is worth noting that we find that most of this variation is temporal rather than cross-sectional. This is most clearly illustrated by our finding of an inverted U-shaped pattern of bond yields during nearly every major episode of democratization prior to 1855, but of relatively flat bond yields during country episodes of democratization in the second half of the nineteenth century. This pattern is further borne out in a close analysis of democratization in a single case: Britain, which experienced three major democratic reforms, the 1832, 1867 and 1884 Reform Acts, over the course of the nineteenth century. Given that later suffrage reforms in Britain enfranchised more voters (in absolute and percentage terms) and reached farther down the "income" ladder, we might expect *greater* turbulence in bond yields later in the century than earlier. However, the data for the British case suggests precisely the opposite. The 1884 Reform Act was associated with visibly smaller (if any) turbulence in bond yields than was the 1832 Reform Act. As Figure 5 below demonstrates, the 1867 Reform Act falls somewhere in-between:

Figure 5: British Bond Yields by Reform Act



In addition to the data above, this temporal pattern of change in how democratization was perceived in Britain is also evidenced in the coverage of the financial press of the time. In 1832, the financial press expressed anxiety over the revolutionary turmoil of the early 1830s.[8] In 1865-67, the financial pages of the Economist expressed milder concern with the "reform question" and relief upon its resolution. By February 1867, as a political settlement on the issue of franchise reform neared, the reaction was almost dismissive of previously grave concerns,

> "By this time, the few foreign investors in English mercantile paper have, no doubt, been enabled to calculate the importance of the Reform agitation which was but a short time back looked on as something dangerous to the mercantile position of this country. Such an idea is apparently discarded and the matter attracts as little observation abroad as at home."[9]

In August, following the official passage of the 1867 Reform Act, the response was one of satisfaction.

> "The passage of the Reform Bill has been but little commented on in connection with stocks, but the settlement of a question that might have led to grave inconveniences, and perhaps to worse results, had it been long delayed, can but be regarded be feelings of satisfaction."[10]

By contrast, though the financial press very closely followed important political events that might affect the markets, we were unable to find any mention of the 1884 Reform Act in the financial pages of *the Economist*. We found one mention, with no reference to a threat of revolution, in the *Investors' Monthly Manual* 1884 annual review:

[8] This is described by Niall Ferguson, The House of Rothschild: Moneys Prophets (Penguin Press, 1998), pp. 231-256.

[9] "The Bankers' Gazette." Economist [London, England] 23 Feb. 1867: 210. The Economist Historical Archive 1843-2006.

[10] "The Bankers' Gazette." Economist [London, England] 20 July 1867: 822

> "Politically, 1884 will be a landmark in the history of the country....These consultations finally led to the framing of a Redistribution bill acceptable to both sides, and in consideration of the Government pressing this bill forward and staking their existence upon it, the Lords passed the Franchise Bill, which has become law. Thus in domestic legislation the Government has been successful beyond expectation."[11]

The variation, largely temporal, in the importance of the perceived threat of revolution during major democratic episodes in nineteenth Europe may help to explain some of the scholarly controversy the topic has elicited. Specifically, it is very likely that a researcher's selection of cases may be important to the empirical conclusions he or she is likely to draw. Studies which focus upon the first half of the nineteenth century are likely to paint a picture of the "Age of Revolution", in the words of Hobsbawm. Analyses which focus on the second half of the nineteenth century (Hobsbawm's "Age of Capital"), however, are likely to attribute much less importance to the threat of revolution.

6. Conclusion

In this paper our analysis has focused on identifying the relationship of financial markets and episodes of democratization. We have discovered that the "threat of unrest" thesis (e.g Acemoglu and Robinson, 2006; Przeworski, 2009) that is so prominent in the comparative politics literature on historical processes of democratization finds support when we directly examine how bond market investors reacted to political events. The findings suggest that major events of democratic change did not occur in a social vacuum, insulated from the often dramatic social turmoil of nineteenth century Europe. Rather, democratic institutional reform not only was associated with scenes of unrest, but these scenes of unrest actually

[11]The Investor's Monthly Manual, Dec. 31, 1884

made capital-holders (and thus we might infer political incumbents) uncertain if not fearful about how political events were unfolding. By tracking monthly perceptions of investors, we also demonstrate that uncertainty, as gauged by spikes in bond yields, sharply rose before democratic reforms and often peaked precisely at the moment of democratic change. The passage of democratic reforms, especially early in the century, appears, in turn, to have tamed the fears of the bond markets, returning investors' assessment of risk to pre-crisis levels.

In addition to providing a firmer empirical basis to existing theory, our second contribution is the discovery of significant long-run over-time variation in the relationship of "revolutionary tumult" and democratization. The general relationship between "threat of unrest" and democratization that we have identified above diminished over the course of the century. This finding is significant for two reasons. First, as noted above, it may help explain why the debate over the contributions of "revolutionary threat" to democracy has been so difficult to resolve. Our findings can help explain why scholars who focus on the 1832 Reform Act in Britain, for example, have found evidence that this event was prompted by mass mobilization (Acemoglu and Robinson, 2006; Morrison, 2011) just as scholars of the 1867 and1884 Reform Acts in Britain have found evidence of the opposite argument. We provide an explanation of this theoretical discrepancy. Rather than continuing to argue past each other, our findings suggest a possibility for theoretical synthesis for the study of "first-wave" democratization (Huntington, 1991) more generally: theorists who argue for the importance of unrest "from below" may indeed be correct for the earlier period just as theorists who insist that democracy comes "from above" by elites may be correct for the later period.

Additionally, this finding also provides some evidence to challenge the not uncommon assumption of cross-time unit homogeneity that underpins much of the comparative political science, economics, and sociology literature on democratization. When scholars pool cross-sectional data to analyze the determinants of democratization, the analyses that follow often require the assumption that a set of possible independent variables vary with dependent variables in a uniform set of ways across time and space. As convenient an assumption as this may be, our findings suggest there appears reason to be skeptical. Capoccia and Ziblatt (2010) have critiqued this notion by arguing,

> "...[Just because] a certain set of variables that caused a democratic reform at Time t_2 was also present at Time t_1 did not necessarily mean that it had the same effect in both circumstances. In fact, even in the same country, democratization at t_1 could have been caused by a different set of factors."

The findings in this current paper support this position. Rather than abandon systematic analysis altogether, however, we believe we have opened a window and research agenda on a major transformation in the evolution of democracy itself. Scholars should ask: what explains why, over time, the causes of democratization may have changed?

Neither the evidence nor the analysis in this paper provide a foundation upon which to answer this question definitively. However, in place of a conclusion, here we can speculate, offering some possible answers to these questions that might guide future research. First, an obvious possible explanation that might "explain away" our cross-temporal findings is the hypothesis that the causes of democratization did not actually change over time; it is simply that bond markets themselves changed, becoming less sensitive to political events over the course of the nineteenth century. This argument is explored by Niall Ferguson (2006) in his analysis of how bond markets responded to the prospects of war. Ferguson considers, for example: first, whether the increasing number of countries on the gold standard after 1870 may have reduced currency risk as a factor in investors' calculations; and, second, whether increased liquidity in global financial markets may have had the effect of reducing the sensitivity of investors to events, as well as other bond market changes that may have disconnected political events from the calculations of investors (Ferguson, 2006).

The arguments may be plausible for the period leading up to World War I (Ferguson, 2006). Yet, even if correct, this declining sensitivity of bond markets occurred gradually and cannot explain away the declining significance of revolutionary turmoil that began as early as the 1850s. For example, the 1884 Reform Act in Britain brought with it neither a spike nor a fall in yield rates. However, in the 1885 end of year "Financial History of the Year 1885," the *Investor's Monthly Manual* begins its report, "During the past year the movements in the prices of securities have been largely determined by political events."[12] Furthermore, though the 1884 Reform Act in Britain brought no changes in British bond rates, Figure 6 above indicates that there were major spikes in British bond yields in April 1885, which are explained in the December 31, 1885 issue of the Investor's Monthly Manual with this account, "Attack by Russian troops on Afghan forces in Penjdeh, defeat of the latter, panic on Stock Exchange in consequence."[13]

The point is this: bond markets continued to be sensitive to political events; it is just that major democratic suffrage reforms of the sort witnessed in Britain in 1884 were no longer the type of event that prompted major concern or necessitated revolutionary threats. Why? Several plausible further explanations suggest themselves that require further investigation. One may be, as James Bryce wrote in his major work *Modern Democracies* in 1921, that by the first part of the twentieth century, Europe was in an age marked by a "universal acceptance of democracy as the normal and natural form of government" (Bryce, 1921). Given the traumatic regime collapses that followed in the decades after Bryce's claim, this proposition may not hold up. A second, perhaps more compelling reason, is that over time in some countries investors and capital-holders began to regard democratization as comparatively harmless; democracy, after all, in the words of Albert Hirschman "tames revolutionary energies..and [set] limits to both participation and influence of the emergent

[12] The Investor's Monthly Manual, December 31, 1885, p. 570

[13] Ibid, p. 577

masses" (Hirschman, 1982 [2002], p. 116). In places and times, where old elites developed the organizational tools of party politics (e.g. the party caucus) and innovatively designed political institutions to protect their interests, (e.g proportional representation, redistricted electoral constituencies, etc.) democracy was made safe for elites. As a result, the stakes were lowered, and less unrest was required to prompt democratization.