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ABSTRACT

This paper presents monthly capital gain, dividend yield, and total return indices, and measures of total capitalization for common equity of Latin American and Caribbean-based firms quoted on the London Stock Exchange during 1869-1929. In addition to an overall Latin American index, I present and analyze sub-indices for countries (e.g., Argentina, Brazil, Chile) and industrial sectors (e.g., banks, mines, railways) with extensive UK listings. I compare the Latin American and Argentinian indices with data from Argentina's Bolsa index during 1900-1929. I also use the indices to compare equity market fluctuations across Latin American sectors and countries during the Baring crisis of 1890.

1. Introduction

On June 27, 1806, a regiment of British troops under the command of General William Beresford entered Buenos Aires. Beresford "… proclaimed British sovereignty, named himself Governor, required an oath of allegiance to King George III from all officials, and shipped more than a million pesos of royal treasure to England" (Kirkpatrick 1931: 49). The victory, however, was short-lived: on August 12, Beresford surrendered to local forces and was imprisoned along with his troops.[1] Although this defeat was one of Britain's last military operations on the South American mainland, it marked the beginning of a century during which Britain became the leading supplier of capital to Latin America.

The export of British capital to Latin America had profound effects on both receiving and sending economies. Most Latin American countries had neither sufficient domestic savings nor financial institutions or markets capable of efficiently channeling domestic or foreign savings toward economic development.[2] Foreign capital aided the growth of railways and other infrastructure aimed at facilitating exports of raw materials and promoted trade between the UK and Latin America.[3] Some of the capital influx found its way into real estate, driving up land prices and contributing to speculation.[4]

For the UK, in addition to promoting trade, capital flows to Latin America and other developing regions exposed UK investors to greater risk emanating from those regions, for example, during the collapse of Baring Brothers in 1890. It has also led to a debate among economic historians about whether British financial institutions and markets were more adept at financing investment projects abroad than at home, thereby starving UK firms for capital and contributing to Britain's relative industry decline.[5]

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[1] According to Mulhall (1878: 92-106), "The English soldiers were sent away, on September 20th, in detachments to the Upper Provinces, where many of them married natives, and among their descendants are Senators, Deputies, and Governors of the present time." Beresford and another officer escaped after being detained for five months.
[2] See Haber (1991) and Taylor (1992) on 19th century Mexico and Argentina.
[3] If not always ownership of those raw materials. For example, see Cottrell (1975: 41-42, on Brazil.
[4] Cottrell (1975: 41).
[5] Chabot and Kurz (2010), Edelstein (1976, 1982), Eichengreen (1982), Goetzmann and Ukhov (2006), Grossman (2015), and Kennedy (1987).

This paper presents monthly capital gain, dividend yield, and total return indices, as well as measures of market capitalization for equities of Latin American and Caribbean-based firms quoted on British exchanges during 1869-1929.[6] In addition to an overall Latin American index, I present and analyze sub-indices for countries (e.g., Argentina, Brazil, Chile) and industrial sectors (e.g., banks, mines, railways) with extensive UK listings.[7]

Several high quality historical stock market indices have been created in recent decades for Britain[8] and other countries.[9] Only a few of these have focused on the returns of overseas equities,[10] despite the fact that Cottrell (1975: 27) and Stone (1999: 6) estimate total British capital exports between 1865 and 1914 to have been approximately £4.1 billion, roughly equivalent to the United Kingdom's GDP in 1917.[11] During century prior to the First World War, British investors were South America's leading external supplier of long-term capital.[12] By 1913, holdings in Latin America represented about one fifth of Britain's total overseas investments, comparable to UK investments in North America (Stone 1968: 311).

Despite the fact that British capital exports were heavily concentrated in government and, to a lesser extent, corporate debt (see below), I focus on equity because it represents a claim on future profits, and therefore may be more likely to reflect expectations about economic growth than bonds, which pay—in the absence of default--no more than a fixed amount.[13] Although the largest component of British investment in Latin America was in the form of government debt, that proportion fell over time, from three quarters in 1865 to 38 percent by 1913 (Stone 1968: 324). By contrast, common equity accounted for slightly less than a quarter of UK total capital

[6] For the remainder of this paper, I use the term Latin America to include both Latin America and non-Latin American Caribbean countries. The overwhelming majority of the UK-listed Latin American equities were traded on the London Stock Exchange, rather than provincial exchanges.
[7] Indices will be posted at http://RichardSGrossman.com/Data.
[8] Acheson et al (2009), Edelstein (1976, 2010, undated), Grossman (2002, 2015, 2017).
[9] Annaert, Buelens, and De Ceuster (2012), Dimson, Marsh, and Staunton (2002), Frennberg and Hansson (1992), Le Bris and Hautcœur (2010), and Shiller (1989).
[10] Exceptions include Chabot and Kurz (2010), Edelstein (1976, 2010, undated), and Grossman (2015).
[11] GDP data are from Hills, Thomas, and Dimsdale (2016). See also Hobson (1914), Segal and Simon (1961), and Simon (1967) on the challenges involved in estimating UK capital exports during the late 19th and early 20th centuries.
[12] Stone (1977). For estimates of the total amount of British capital in Latin America, see Mulhall (1878: 527 ff.), Paish (1909, 1911), Stone (1999), Davis and Gallman (2001: 25ff.). See also Hobson (1914), Nurkse (1954), Segal and Simon (1961), and Simon (1967). Data on the domestic supply of capital in Latin America are scarce, so it is not possible to assess the relative importance of internal and external finance. Taylor (2003: 176) presents annual savings data for Argentina, but cautions that the data are fragile.
[13] Campbell and Taksler (2003: 2321).

exports during 1865-1914, with a slightly higher proportion in Argentina (25.7 percent) and somewhat lower proportions in Brazil (12.3 percent) and Chile (16 percent) (Stone 1999: 403, 413).

Over almost all sub-periods, UK-listed Latin American equities were characterized by higher returns and volatility than those of domestic British equities and the UK market as a whole, including both foreign and domestic equities. These higher returns and volatility were driven mainly by capital appreciation, rather than higher dividend yields. Among industrial sectors, natural resource-based sectors—mines and land, mortgage, and financial companies—exhibited high returns and volatility, while banks, chemicals, and gas, light, and waterworks provided shareholders with lower returns and volatility. The differences in country indices reflect the proportion of that country's equity in high risk-high return natural resource industries and in comparatively lower risk-lower return infrastructure industries, such as railways and gas, light, and waterworks.

The industrial distribution of securities on UK and the Buenos Aires Bolsa (from 1899) were substantial different. Railway equities were listed exclusively in London—an average of four per month in 1869, rising to more than 30 per month by the 1890s, suggesting that the Buenos Aires market was not able to raise sufficient funds to finance these capital-intensive projects. By contrast, insurance and manufacturing firms were listed exclusively on the Bolsa throughout the overlap of the two samples (1900-1929), suggesting that the local character of these shares--and knowledge needed to assess them--made them more appropriate for domestic investors. Returns to equities on the Bolsa (unadjusted for currency fluctuations) were generally higher and more volatile than those listed in the UK--not surprising given the likely difference in capitalization.

Finally, I analyze equity returns in the years surrounding the Baring crisis of 1890 and find that the boom-bust pattern in Latin American equities was similar to that of the UK market as a whole, but more exaggerated. Unsurprisingly, equities from Argentina and Uruguay, which were at the heart of the crisis, showed a more pronounced drop than those in Brazil, Chile, or Latin America as a whole. Banks saw the largest run-up and a large percentage decline in equity prices, while the railway sector experienced a more prolonged slump in prices.

The remainder of this paper is organized as follows. In the next section, I describe the data sources and discuss some of the difficulties inherent in the underlying data and in the collection and coding methodologies. In section 3 I present a summary of the data, including information on the distribution of equity issues and capitalization among countries and industrial sectors. In section 4 I present decadal averages and standard deviations of capital gains, dividend yields, and total returns across countries and sectors, as well as results of capital asset pricing model (CAPM) regressions. In section 5 I compare the behavior of indices of Latin American and Argentine equities traded in London with those traded on the Buenos Aires Bolsa, including both the distribution of equities across industrial sectors and averages and standard deviations of capital appreciation on both markets during 1900-1929. In section 6 I take a closer look at the behavior of the country and industrial sector sub-indices during the run-up to and aftermath of the Baring crisis in November 1890. Conclusions follow in section 7.

2. Data sources and issues

The data consist of the common equity of firms with operations primarily in Latin America traded on British equity markets, principally the London Stock Exchange. The underlying data come from the *Investor's Monthly Manual* (*IMM*), as collected and digitized by the International Center for Finance (ICF) at Yale University.[14] The *IMM* data present a number of challenges that are not present in most modern financial data sources.[15] For example, the *IMM* did not publish separate tables for debt, equity, and other types of securities (e.g., rights, warrants)--or for different types of equity (e.g., common, preferred)--so an important preliminary step in constructing equity indices is to distinguish common (i.e., ordinary, in the parlance of the time) equity from other types of debt and equity securities. Because the *IMM* did not report a consistent annual dividend series until June 1879, I reconstructed prior month dividend yields from reports of individual firm dividends taken from the *IMM*.[16] Although the *IMM* did classify most securities by industrial sector, making it possible to construct sectoral sub-indices, the

[14] http://som.yale.edu/faculty-research/our-centers-initiatives/international-center-finance/data/historical-london includes both digitized data and scanned versions of *IMM* issues.
[15] See Grossman (2016) for a more detailed description of the data, the problems inherent in the *IMM*'s reporting, and the errors introduced by the ICF's coding methodology.
[16] The ICF published the *IMM* data in two forms. See Grossman (2017: Appendix 1) for an explanation.

IMM's classification system changed over time, limiting its usefulness. Fortunately, many of the categories common among Latin American firms remained consistent throughout the sample.[17]

In addition to the shortcomings inherent in the underlying *IMM* data, the ICF's coding methodology, which was not recorded, presents additional challenges. For some securities in some years, the *IMM* did not list prices in pounds, but as a discount from or premium over par value. Because the ICF coders mistakenly listed these discounts and premiums as actual prices, I dropped these entries from the sample to the extent possible.[18] The ICF's coders also improperly categorized many companies in terms of home country, industrial sector, and type of security and made a variety of data entry errors; I corrected these to the extent possible.[19]

The indices rely on several key pieces of information that the *IMM* reported throughout the sample period: the security name; the number of shares or amount of stock outstanding; the authorized "amount"; the "par" or "paid-in" amount; the security price; and dividends. In addition to identifying the physical location of the issuing company's activities and its industrial sector, the security name can help distinguish the issue as debt or equity. The authorized "amount" represents the maximum sum that purchasers could be required to pay upon the share's initial public offering. Issuing firms could require purchasers to pay less than the full amount, leaving shareholders with a contingent liability that was callable at the firm's option.[20] "Par" or "paid-in" represents the sum shareholders were required to pay at the initial offering; capital calls may have increased this quantity over time. Information on "number of shares outstanding or amount of stock" and "par" make it possible, combined with price data, to calculate the total

[17] These sectors include: banks; gas, light, and waterworks; land, mortgage, and financial; mines; railways; shipping; telegraphs; and trams.
[18] Because the ICF data does not indicate which prices were expressed as a discount from or premium over par, I cannot be certain that I have deleted all such observations. In addition, the ICF dataset is missing a large portion of the December 1894 data; I collected and entered these by hand.
[19] Determining a firm's home country poses several difficult challenges (Grossman 2015: 474). Of the more than 63,000 security-month observations, 1846 could not be ascribed to a particular country. I include these in the overall Latin American index, but not in any of the country sub-indices.
[20] See Jefferys (1946) and Grossman and Imai (2013) on contingent capital.

market capitalization of a security issue.[21] I use price and dividend data to construct capital gain, dividend yield, and total return series. When possible, I use end-of-month price data.[22]

I dropped observations if any component of a security's data was missing for a given month, with the exception of dividends, which I assumed were zero if left blank.[23] Because it complicates the calculation of capital gain and total return, I exclude securities which underwent a change in par value from the return indices for the month in which the par change took place. Similarly, I exclude stock splits, new issues (whether or not related to a merger), and retirement of issues (for any reason)--for purposes of calculating return indices, although not for gauging the size of the market--in the month that they occur.[24] I dropped equities denominated in currencies other than pounds sterling, which constitute less than 3 percent of the security-month observations. Most of these were denominated in US dollars and might have been a more important component of US, rather than UK securities markets.

3. Data overview

The data set consists of approximately 63,000 security-month observations on 294 distinct securities representing about 250 companies located in 19 countries,[25] spanning the period from January 1869 to December 1929. No observations are available during the second half of 1914, when UK markets were closed due to World War I.

Figure 1 plots the number, market capitalization and paid-up capitalization of Latin American equities traded in the UK. The number of issues rose gradually at first, doubling from about 30 in 1869 to about 60 by the mid-1880s—or by about two per year. The rate of growth

[21] For shares, the total market capitalization is the number of shares multiplied by the market price. For equities designated as "stock," "amount of stock" indicates the total market capitalization of the issue when price is equal to par, typically 100. The *IMM* does not always clearly indicate which securities are stocks, making it a challenge to distinguish stocks form shares.
[22] ICF coders did not input monthly closing price data for the years 1908-14, so the opening price from the subsequent month was used in its place during this period.
[23] I drop securities for which data existed in fewer than 12 months from the sample, following the methodology adopted by Acheson et al. (2009: 1110).
[24] If amount, par, or type of security was equal in months *t-1* and *t+1*, but missing in month *t*, I assumed it to be equal in month *t*.
[25] The countries include Anguilla, Argentina, Bolivia, Brazil, Chie, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guyana, Jamaica, Mexico, Nicaragua, Peru, Paraguay, Trinidad and Tobago, Uruguay, and Venezuela.

picked up dramatically during the late 1880s—to nearly 10 per year—and the total number of issues reached 114 by May 1892. The number of securities declined during the remainder of the 1890s, possibly as an after-effect of the 1890 Baring crisis, dipping to 81 by 1900. The number of issues increased during the first decade of the 20th century, and remained in the 100-120 range after a post-World War I drop through 1929.[26]

[Figure 1 about here]

Market and paid-up capitalization grew steadily during the 1870s and 1880s, from £9.2 million (market capitalization) and £12.8 million (paid-up capitalization) in January 1869 to about £40 million for both at the beginning of 1888. Market capitalization peaked at £58.5 million six months before the November 1890 Baring crisis, and then declined by more than a quarter, to less than £42 million, by August 1893. Counterintuitively, paid-up capital continued to rise in the aftermath of the Baring crisis, along with the number of securities, levelling off at £70-£75 million between 1891 and 1894. Both market and paid-up capitalization grew rapidly during the decade prior to World War I, although market capitalization began to decline in the autumn of 1912. Paid-up capitalization resumed its upward march after World War I, which continued through the end of 1928. Market capitalization rose during the post-World War I boom, but declined by more than one third during the bust of 1920-21. During the subsequent stock market recovery market capitalization more than doubled, reaching a peak in 1928.

Table 1 presents a breakdown of the data by country, providing annual averages of monthly figures on the number of securities (panel A), market capitalization (panel B), and paid-up capitalization (panel C) for the years 1869, 1879, 1889, 1899, 1909, 1919, and 1929 for countries with the largest number of issues and greatest equity capitalization. For comparative purposes, Table 1 also presents equivalent totals from the *IMM* for UK firms and all firms. Latin American equity securities constituted a small but growing segment of the UK equities market, accounting for less than 5 percent of all securities in 1869, but rising to nearly 9 percent by 1919.

[26] The post-World War I drop (and subsequent recovery) in number of firms and market capitalization can be explained by the fact that many securities did not resume trading until mid-late 1915. Wartime regulations limited overseas issues in an effort to direct domestic savings toward government needs. Regulations were extended throughout the 1920s, both to reduce competition for domestic (government and corporation) borrowers and to support the exchange rate. Atkin (1970), Great Britain (1917). Despite these regulations, the number of distinct Latin American issuers rose from 106 to 117 between 1910 and 1920, before declining to 99 in 1929.

These securities comprised 2.6 percent of total market capitalization in 1869, rose to nearly 8 percent in 1909, and then declined to 6.7 percent in 1919 and 5.8 percent in 1929. Latin American securities rose from 3.4 percent of the paid-up capital of the entire equity market in 1869 to more than 10 percent by 1909.[27]

[Table 1 about here]

Firms based in Argentina, Brazil, and Chile were the largest Latin American equity issuers on the London market, accounting for between 57 and 69 percent of issues, 61 and 86 percent of market capitalization, and 52 and 75 percent of paid-up capitalization of all Latin American equities. Argentina and Brazil constituted roughly equal shares through the early 1880s, when the growth of Argentine railway shares led it to become the dominant issuer, accounting for between two and four times the amount of Brazilian equity traded in London, based on market or paid-up capitalization. At their greatest extent, equity of Latin American-based firms on the UK market were equivalent to about 15 percent of domestic UK equity quoted in the *IMM*.

Table 2 presents a decadal breakdown of Latin American equity by industrial sector. Railways were by far the dominant sector, accounting for between 14 and 31 percent of all issues, and between a quarter and two-thirds of market and paid-up capitalization. Mining, particularly gold and silver mines in Brazil and Mexico and copper mines in Chile, were the most common Latin American equity security in 1869 (45 percent of issues) and represented substantial market and paid-up capitalization at the time (15 and 21 percent, respectively), but declined to less than 4 percent of market capitalization by 1889 and less than 2 percent of paid-up capitalization by 1899.[28] Banks, chemicals (largely nitrate from Chile), gas, light, and waterworks, and land, mortgage, and financial companies were also substantial sectors.

[Table 2 about here]

[27] The average paid-up capitalization of Latin American firms remained relatively constant at around £500,000 between 1869 and 1891, suggesting that capital was increasing on the extensive margin; subsequently it increased on both extensive and intensive margins.

[28] It is unclear what caused the dramatic decline in the number of mining issues. According to the *Register of Defunct and Other Companies*, several of these were reconstituted under new names and remained on the Stock Exchange, however the new companies do not reappear on the *IMM* listings.

Table 3 presents data on the distribution of equity among industrial sectors by country. Railways, as noted above, were the largest industrial sector in Latin America. This sector was especially dominant in Cuba, comprising more than 90 percent of UK-listed Cuban equity over the entire period, and Argentina and Uruguay, where it accounted for more than two thirds of capitalization. Railways accounted for at least one third of total capitalization in all other Latin American countries, except Chile, Peru, and Venezuela, where the largest sectors were chemicals, particularly nitrate and guano (Chile, Peru) and oil (Peru, Venezuela). Other locally important sectors were banks (Argentina, Brazil, Mexico), food, especially cattle (Argentina, Brazil), gas, light, and waterworks (Brazil, Uruguay), mining (Chile, Colombia, Mexico, and Venezuela), telegraphs (Brazil), and trams (Columbia).

[Table 3 about here]

4. Returns, volatility, and CAPM

The return to holding equity *i* during month *t* consists of the capital gain plus the dividend yield. I calculate capital gain as:

$$\text{Capital gain}_{i,t} = (P_{i,t} - P_{i,t-1})/P_{i,t-1},$$

where $P_{i,t}$ is the price of security *i* at the end of month *t*. Dividend yield is calculated as:

$$\text{Dividend yield}_{i,t} = D_{i,t}/P_{i,t-1},$$

where $D_{i,t}$ is the dividend accruing to security *i* during month *t*. Although the calculation and interpretation of the monthly capital gain is straightforward, the interpretation of the dividend yield in any particular month is not. The *IMM* dividend yield series artificially smooths the flow of dividends by ascribing the last two dividend payments to the current month's yield when, in reality, dividends were most often paid only twice per year. For example, the dividend yield of a share with a stable price of £100 that paid dividends of £2.5 in January and July would be expressed as 5 percent *in every month*, instead of 2.5 percent in January and July and zero in other months, artificially smoothing the dividend yield series. Therefore, I present dividend yield and capital appreciation data calculations separately and do not combine them to present total return series.

Tables 4 and 5 present data on the average and standard deviation of capital gains and dividend yields for the decades 1869-78, 1879-88, 1889-98, 1899-1908, 1909-18, 1919-28, the year 1929, and the entire 1869-1929 period. Because I calculate capital gains on a monthly basis, I also provide the annual equivalent, or $(1+ \text{monthly capital gain})^{12} - 1$. Tables 4 and 5 include data for the five Latin American countries (Argentina, Brazil, Chile, Mexico, Uruguay) with the greatest representation in the *IMM* listings, nine of the largest industrial sectors (banks, chemicals, food, gas, light, and waterworks, land, mortgage, and financial, mines, railways, telegraphs, and trams), all Latin American equities, all domestic UK equities, and the universe of all common equities listed in the *IMM*, both foreign and domestic. I calculate each series with three different weighting schemes: unweighted (i.e., equal-weighted), weighted by market capitalization, and weighted by paid-up capitalization. Each of these weighting schemes has advantages. The unweighted index will not be unduly affected by capital gains or dividends of one or two highly capitalized securities, unlike those weighted by market capitalization, but will be more representative of relatively small firms. Indices weighted by paid-up capitalization may represent a useful compromise between market capitalization-weighted and unweighted indices for two reasons: (1) they give greater weight to larger firms, in contrast to unweighted indices; (2) they are less volatile because weights are based on generally slow-to-adjust paid-up capital, rather than more volatile market prices.

[Tables 4 and 5 about here]

Over the entire 1869-1929 period, annual capital gains of Latin American equities exceed those of domestic UK equities by between 2.1 and 2.7 percent, depending on the weighting scheme used. Capital gains of Latin American equities are more volatile, with monthly standard deviations between 1.6 and 2.2 times those of UK equities. Higher returns and volatility are not surprising, given Latin America's status as an emerging region (Grossman 2015). The greater volatility of Latin American equities persists throughout all sub-period of the sample; higher Latin American returns are most pronounced during 1869-1889 and 1899-1909. The decade 1889-1899, marked by the Baring crisis, is characterized by lower returns.

Natural resource-based firms—mines and land, mortgage, and financial companies—exhibited both the highest returns and volatility. Banks, chemicals, and infrastructure such as gas, light, and waterworks and railways provided somewhat lower returns and/or volatility.

Thus, equities of countries heavily committed to mining (Chile, Mexico) exhibited relatively high capital gains and volatility, while Argentina, Brazil, and Uruguay, which had a greater reliance on infrastructure, such as railways and gas, light, and waterworks, exhibited lower capital gains and volatility.

Dividend yields of Latin American equities do not differ substantially from those of UK companies or the market as a whole. The Latin American dividend price ratios are slightly below those of the overall market using the unweighted dividend yields and slightly above the overall market using yields weighted by market capitalization, possibly suggesting that larger capitalization firms paid slightly higher dividends. Latin American dividend yields weighted by paid up capitalization are essentially identical to those of the overall market. Banks, and to a lesser extent, gas, light, and waterworks, exhibit slightly higher than average dividend yields, perhaps because these businesses were more predictable and less likely to generate high capital gains.

I assess the returns of individual industrial sectors and countries in a more systematic way by analyzing equity returns within the framework of the Capital Asset Pricing Model (CAPM).[29] To do so, I run a regression with the following form:

$$R_{s,t} - R_{F,t} = \alpha + ß(R_{M,t} - R_{F,t}),$$

where $R_{s,t}$ is the capital gain on the portfolio of Latin American equities or a subset of that portfolio representing sector or country *s* in month *t*, $R_{F,t}$ represents the risk-free rate in month *t*, using the closing UK consol rate as a proxy, and $R_{M,t}$ is the monthly return on the universe of common equities listed in the *IMM*, both foreign and domestic. [30] The coefficient ß is interpreted as systematic risk, or the extent to which the excess returns (over the risk free rate) of the sectoral indices covary with those of a market benchmark, in this case the sample of all common equities listed in the *IMM*, while he alpha represents the portfolio's risk-adjusted performance. The results, employing all three weighting schemes, are presented in table 6.

[29] Sharpe (1964), Lintner (1965).
[30] All returns are on a monthly basis. The consol rate data, represented as one twelfth of the stated annual rate, are taken from Global Financial Data. Monthly overall market returns are from Grossman (2017).

[Table 6]

For the entire portfolio of Latin American securities, CAPM regressions using two of the three weighting schemes yield betas greater than one: the unweighted index yields a beta of 1.370 and the index weighted by paid-up capitalization yields a beta of 1.199; the index weighted by market capitalization yields a beta of .951. This result suggests, reasonably, that larger capitalization equities were less subject to systematic risk than smaller firms. They also serve as a benchmark against which to check the country and sector indices.

The banking sector exhibits lower betas than the Latin American market as a whole, as do infrastructure sectors, such as gas, light, and waterworks, trams, and telegraphs suggesting, plausibly, that these sectors tied to long-term economic growth and development were less subject to systemic risk. Railways, because they were the dominant Latin American sector, exhibit betas that are quite close to those for Latin America overall. Unsurprisingly, natural resource-based sectors, such as mines and chemicals, have betas that are above Latin American averages. Country betas reflect the industrial specialization: Chile and Mexico, which were heavily concentrated in mining and chemicals exhibit relatively high betas; betas for Argentina, Brazil, and Uruguay are lower.[31]

To examine the evolution of country betas over time, I perform rolling CAPM regressions on unweighted indices using five year windows. The resulting betas are displayed in Figures 2 and 3. Figure 2 presents the estimated betas for Brazil, Chile, and Mexico; Figure 3 presents betas for Argentina and Uruguay; both figures include estimated betas for the overall Latin American index for purposes of comparison. Given the high volatility of Chilean and Mexican equities during the 1870s and 1880s (see table 4), it is perhaps not surprising that their betas are high relative to the rest of Latin America during these decades;[32] by contrast, Brazil's rolling betas remain below the Latin American average, between 1 and 2 for most of the period. These betas increase around the 1907 crisis and then remain relatively stable until the late 1920s when they again rise. Betas for Argentina and Uruguay, which were most closely associated

[31] Mining shares exhibit high volatility in part because their share prices are low relative to equities in other sectors.
[32] Chile's beta was between 4 and 9 from the 1870s through the early 1890s; Mexico's was between 2 and 5.

with the Baring crisis, exhibit a substantial rise—from below 1 to about 2.5—around the Baring crisis and, like those displayed in Figure 2, increase around the crisis of 1907.

[Figures 2 and 3 about here]

5. Comparison with Buenos Aires Bolsa

Although London was an important source of foreign capital for Latin America during the late 19th and early 20th centuries, it was by no means the only one. Banks and securities markets in France, Germany, and the United States were also important and growing sources of debt and equity financing (Bersch and Kaminsky 2008, Eichengreen 1989: 114, Esteves 2012, Saul, 2005).[33] Listing on a large foreign exchange would have had several advantages for Latin American firms. First, it would have provided access to greater liquidity and a broader, more diverse universe of investors. Second, listing in a large, stable foreign currency, such as pounds, might have increased foreign demand for Latin American securities beyond what it would have been if the security was listed in a less stable Latin American currency. Third, listing on a major exchange would have garnered more attention from the world's financial press, which could have increased access to financing. Finally, it is possible that a large foreign stock exchange would have been better governed than one in an emerging economy and hence a more efficient intermediator between firms and investors. It should not be surprising that the benefits of an overseas listing for 19th century Latin American firms are essentially identical to those used by the New York Stock Exchange today to encourage non-US firms to list in the US.[34]

Latin American firms during late 19th and early 20th centuries also issued shares on newly formed domestic exchanges, several of which had come into being during the 19th century.[35]

[33] During 1870-1913, the UK's share of overseas investment was about three times that of Germany. Capital flows to Latin America during 1883-1913 constituted almost twice as large a share of British overseas investment as German, implying that the UK sent approximately six times the amount of capital to Latin America as Germany. Further, German capital exports were more concentrated in government securities than those of Britain. Esteves (2012: 31).

[34] https://www.nyse.com/make-the-move/international-listings. Accessed January 31, 2017.

[35] According to Goetzmann and Jorion (1995: 5), the oldest stock exchanges in Latin America were established in Argentina (1871), Brazil (1877), Chile (1892), Venezuela (1893), and Mexico (1894); however, the web site of the

Listing on local exchanges might have been advantageous for firms if the listing requirements were less stringent, in terms of minimum capitalization, or if the costs associated with listing were lower.[36] Hence, we would expect locally listed firms to be, on average, smaller, and provide higher returns--at the cost of greater risk--than those listed in a major foreign market.[37] Because systematic data on equities traded on Latin American exchanges during the late 19th and early 20th centuries are sparse, it is difficult to verify if the above statements are true. In this section, I use data on share prices from the Buenos Aires Bolsa gathered by Nakamura and Zarazaga (1997, 2003) to compare Argentine equities traded in the UK with those traded in Argentina.

Table 7 presents data on the distribution of Argentine securities listed in the UK and those listed on the Bolsa by industry, aggregating across all security-month observations. Because Nakamura and Zarazaga do not have data on market or paid-up capitalization, this comparison can only be made on the basis of the number of security issues. Railway equities were issued exclusively in the UK, which makes sense given their high capital requirements. None were listed on the Bolsa, suggesting that even a "small" railway might have required more capital than could be raised on the domestic market. By contrast, Argentine manufacturing and oil firms were listed solely on the Bolsa. One could speculate that the smaller size and local character of these shares (i.e., the knowledge needed to evaluate them) made them more appropriate for domestic investors in Argentina, although this is by no means clear. Similarly, Latin American insurance companies were listed on the Bolsa but not in London. The UK was home to a large number of internationally diversified insurance companies, particularly marine insurance companies, so an insurance company focused solely on one or more Latin American countries might not have been large or diversified enough to attract UK investors. Banks were also more common on the Bolsa, which may have been because the banks listed on the Bolsa were organized under Argentine law, while many of the UK-listed Latin American—really

Bolsa de Comercio de Buenos Aires reports that it was established in 1854 and began trading shares in 1856 (http://www.bcba.sba.com.ar/institucional/historia/, accessed June 8, 2016).

[36] Blass and Yafeh (2001) argue that Israeli firms undertaking IPOs in the United States during the 1990s did so to signal their strength and dynamism to potential investors, despite the additional costs associated with US listings.

[37] Grossman (2015) suggests that the returns on UK-listed Australian securities were lower than those in the typical emerging market of the 19th century because riskier Australian ventures were listed on local Australian exchanges.

multi-national--banks were headquartered in the UK and organized under British law.[38] Alternatively, it may have been that local banks were not large enough to benefit from a London listing. Other sectors, such as electric utilities, chemicals, food, and trams, were listed in both countries.

[Table 7 about here]

I use Nakamura and Zarazaga's data to calculate an unweighted monthly capital appreciation index for the Bolsa.[39] Because the index is based on a small number of issues, particularly in the early years of the sample, it should be treated cautiously. I plot the monthly Bolsa index in Figure 4, along with similarly unweighted capital appreciation indices of Argentine and Latin American equities in London. Both indices follow approximately the same pattern of ups and downs and are highly correlated ($\rho>0.95$), however, the Bolsa index exhibits more rapid growth and higher volatility than its UK counterpart. The Bolsa index lost a quarter of its value between 1900 and 1902, and then increased to more than 450 percent of its 1900 value by 1905, while the London-based indices rose at a more sedate pace, doubling their 1900 value by 1905. Both indices slumped during the run-up to World War I, following World War I, and in 1929. The Bolsa's decline was far more dramatic during the run up to World War I, approximately 40 percent versus less than half that for the London-based indices. The UK-based indices lost a greater percentage of their value during the post-World War I decline (between a quarter and a third, versus about a fifth for the Bolsa), perhaps indicative of the greater trauma among UK investors during this slump. Both indices more than doubled during the booming 1920s, until hit by the onset of the Great Depression in 1929.

[Figure 4 about here]

Data on average monthly return and standard deviation for all three indices are presented in Table 8 for each decade, as well as for 1900-1929 as a whole. As Figure 2 and Table 8 make clear, there is little difference between the indices of UK-traded equities of Argentine companies and Latin American companies as a whole: both indices post about a six percent return over the

[38] Jones (2001). These banks took local deposits and lent the proceeds to foreign-owned firms involved in trade and finance. Cottrell (1975: 42).

[39] Because information on the market capitalization of Bolsa-listed shares are unavailable, it is not possible to calculate indices weighted by market or paid-up capitalization.

1900-1929 period with similar volatility. Bolsa returns are, on average, about twice those of UK returns, with correspondingly larger standard deviations.

[Table 8 about here]

The comparison of the Bolsa and UK-traded Argentine equity accords well with intuition. Equities traded on the Bolsa were higher risk and higher return those from Argentina—and Latin America more generally--traded in London. This may reflect the fact that larger, more established enterprises were listed in the UK, while smaller, more dynamic, but riskier securities could only find a listing on the Bolsa. Among all three indices, the highest returns occur during 1900-1909, perhaps reflecting the vitality of a newly developing region and, in the case of the Bolsa index, a relatively small sample. Subsequent declines in returns may suggest that the maturing Argentine market was becoming tamer. A more detailed comparison of the underlying equities in the Bolsa and UK indices may shed light on this question.

6. The Baring Crisis

The most significant financial turbulence to emanate from Latin America during the 1869-1929 period was the Baring crisis, which erupted in November 1890 when the old, established London merchant banking firm of Baring Brothers collapsed. Baring had longstanding financial ties to Latin America, having underwritten its first Latin American loan in 1824. Throughout the second half of the nineteenth century, Baring became increasingly committed to issuing and underwriting loans on behalf of South American governments and public works projects. By the 1880s, with booming conditions in Latin America, loans to Argentina and Uruguay accounted for about three quarters of Baring's portfolio.[40] The boom in Argentina had led to a rapid increase in land prices and the buildup of a substantial external debt.[41] By 1890 the economic boom began to collapse, leading to a decline in land prices, a fall in the value of the country's inconvertible paper currency, and a run on the domestic banking system. Civil disturbances further cooled European demand for Argentine securities, leading to

[40] See Williams (1920), Ford (1956), Mitchener and Weidenmier (2008), and Grossman (2010) for a more detailed description of the events surrounding the Baring crisis.
[41] Annual external debt service rose to the equivalent of approximately 60 percent of annual exports.

steeper declines in bond prices, an abortive attempt to arrange a moratorium, and the collapse of Baring Brothers.[42]

The failure of Baring Brothers led to a Bank of England-led rescue. The Bank established a guarantee fund—to which many of the City of London's leading financial institutions subscribed--which was to be called upon if the Bank-supervised liquidation of Baring's assets was not sufficient to satisfy its creditors. The rescue notwithstanding, the crisis had severe effects in London, South America, and the wider world.

Studies of financial crises during the late 19th and early 20th centuries—particularly emerging market crises--that analyze behavior of financial markets focus almost exclusively on bond markets (e.g., Bordo and Murshid 2001, Mauro, Sussman, and Yafeh 2006, Mitchener and Weidenmier 2008, and Triner and Wandschneider 2005). This makes sense, since financial crises during this period led to widening sovereign debt spreads, as a crisis-country's ability to service its debt and maintain gold convertibility were called into question (Bordo and Rockoff 1996). The focus on debt markets also makes sense because such markets typically developed at an earlier stage of development than equity markets (Grossman 2010: 13). Nonetheless, the development in recent years of better quality equity market data, and the increasing reliance on equity over time suggests that equity data can also provide useful information on a country's economic health--or lack thereof.

Figure 5 presents monthly unweighted capital appreciation indices for Argentina and Uruguay, two countries prominently represented on Baring's balance sheet, and the banking and railway sectors from January 1885 through December 1894. For comparative purposes, Figure 5 also includes unweighted capital appreciation indices for domestic UK equities and UK-listed Latin American equities. The characteristic boom/slump in equity prices, with a peak right around 1890, is clear. Prices of equities from Argentina and Uruguay, as well as railways, all increased by about 75 percent between 1885 and the pre-crisis peak at the end of 1889/beginning of 1890, before declining to 1885 levels or below within a year of the crisis. Bank equities, perhaps especially susceptible to the financial boom, rose more rapidly during the five years preceding the crisis and declined by about a third in the wake of the crisis. By contrast, UK

[42] Batchelor (1986: 49-54), Hawtrey (1938: 105-110). Land prices fell by 50 percent between 1889 and 1890.

equities followed a similar, but more muted, pattern: advancing less than half as much as Latin American equities during the run-up to the crisis and experiencing a less dramatic post-crisis decline. This suggests that UK firms were relatively insulated against the macro fluctuation in Argentina and that the ensuing financial distress in the UK had a more limited impact on domestic equities.[43]

[Figure 5 about here]

7. Conclusions and Extensions

This paper presents monthly capital gain, dividend yield, and total return indices, as well as measures of total market capitalization and paid-up capitalization for equities of Latin American-based firms quoted on British exchanges during 1869-1929. I present both an aggregate Latin American equity index and sub-indices for individual countries and industrial sectors that were well represented on UK exchanges.

In line with previous studies, I find that Latin American equities were characterized by both greater returns and greater volatility—primarily based on capital appreciation--than those of more mature economies. Natural resource-based sectors typically earned both high and volatile returns, while infrastructure sectors yielded lower returns with less volatility. Not surprisingly, large capitalization firms (e.g., railways) were listed in London, while smaller capitalization firms, characterized by higher and more volatile returns, were more likely to be listed domestically. Finally, the Baring crisis affected Latin America equities more intensely than the London market as a whole, and Argentina and Uruguay more severely than other Latin American issuers.

[43] Mining company shares defy the boom bust pattern, rising consistently during 1885-1894. This trend was especially clear in Brazilian gold mines (St. John del Rey and Don Pedro Gold Mining), with an average capital gain of between 6.8 and 8 percent during the decade. This impressive record is, in part, due to the fact that mining share prices were generally quite low. Hence, a small price rise, say from £0.125 to £0.625, represents a 400% increase, while a movement in the opposite direction, £0.625 to £0.125, represents an 80% decline.

In addition to these results, the new indices suggest an agenda for research on Latin American economic and financial history.[44] One of the most puzzling questions to be addressed is how Argentina, which most economists during the first three decades of the twentieth century would have placed among the world's most advanced economies (Díaz Alejandro 1970:1), began a long economic decline sometime between the beginning of the First World War and the onset of the Great Depression.[45] Taylor (1992) argues that, at least partially because of demographic factors, Argentina was especially dependent upon foreign capital during the Belle Époque—much of it raised in London—to finance its continued growth. With the interruption of this capital flow in the aftermath of the First World War, possibly due in part to UK capital controls, Argentina's growth naturally stalled. More detailed data on the flow of equity capital to various industrial sectors, combined with information on the economic health of those sectors, may shed light on the extent to which the slow-down in Argentina's economic growth can be ascribed to capital flows.[46] It would also be useful to augment the equity data presented here with ICF-collected data on UK-listed Latin American corporate debt, which could help explain differences in economic growth between Latin American countries.

The data presented here, combined with the data gathered by Nakamura and Zarazaga, offer further opportunities for more in-depth investigation. For example, Nakamura and Zarazaga present partial dividend data. With additional refinement, it may be possible to compare dividend data between markets and sectors. It may also be possible, by combining the data described here with ICF-gathered data on UK-listed debt, to compare the roles and behavior of debt and equity across sectors. Finally, data collection on other Latin American equity markets will allow researchers to make more detailed comparisons between local and foreign equity markets, yielding greater insight on the consequences of local versus non-local listings.

[44] See Turner's (2016: 47ff.) for a comprehensive review on the benefits of historical equity data for financial economics.
[45] There are differences of opinion on exactly when this slowdown began. See Díaz Alejandro (1970), Di Tella and Zymelman (1967), Nakamura and Zarazaga (1997).
[46] See Acheson, Coyle, and Turner (2015), Mitchell, Chambers, and Crafts (2011).

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Figure 1

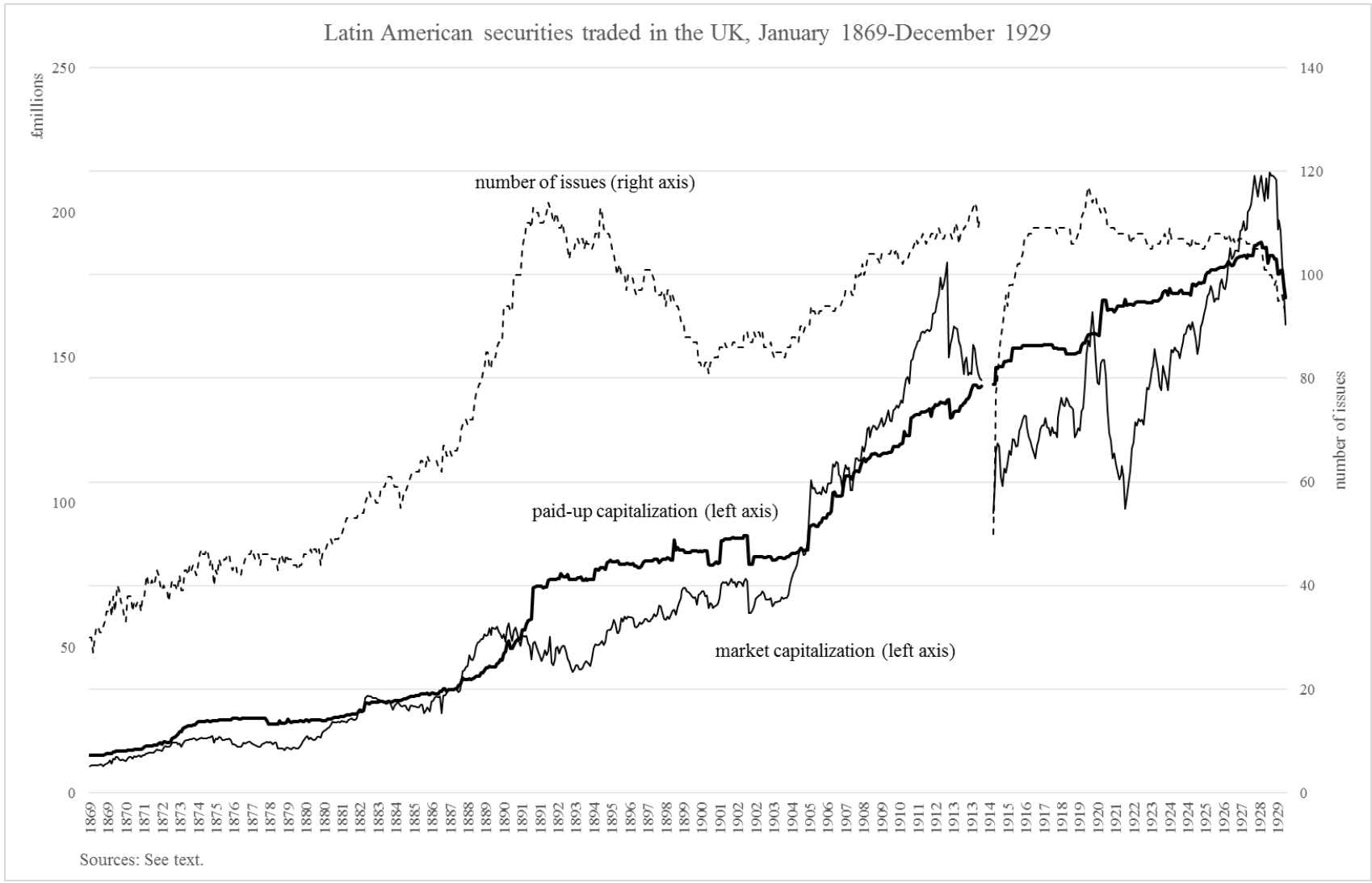
Latin American securities traded in the UK, January 1869-December 1929
£millions
number of issues
number of issues (right axis)
paid-up capitalization (left axis)
market capitalization (left axis)
Sources: See text.

Figure 2

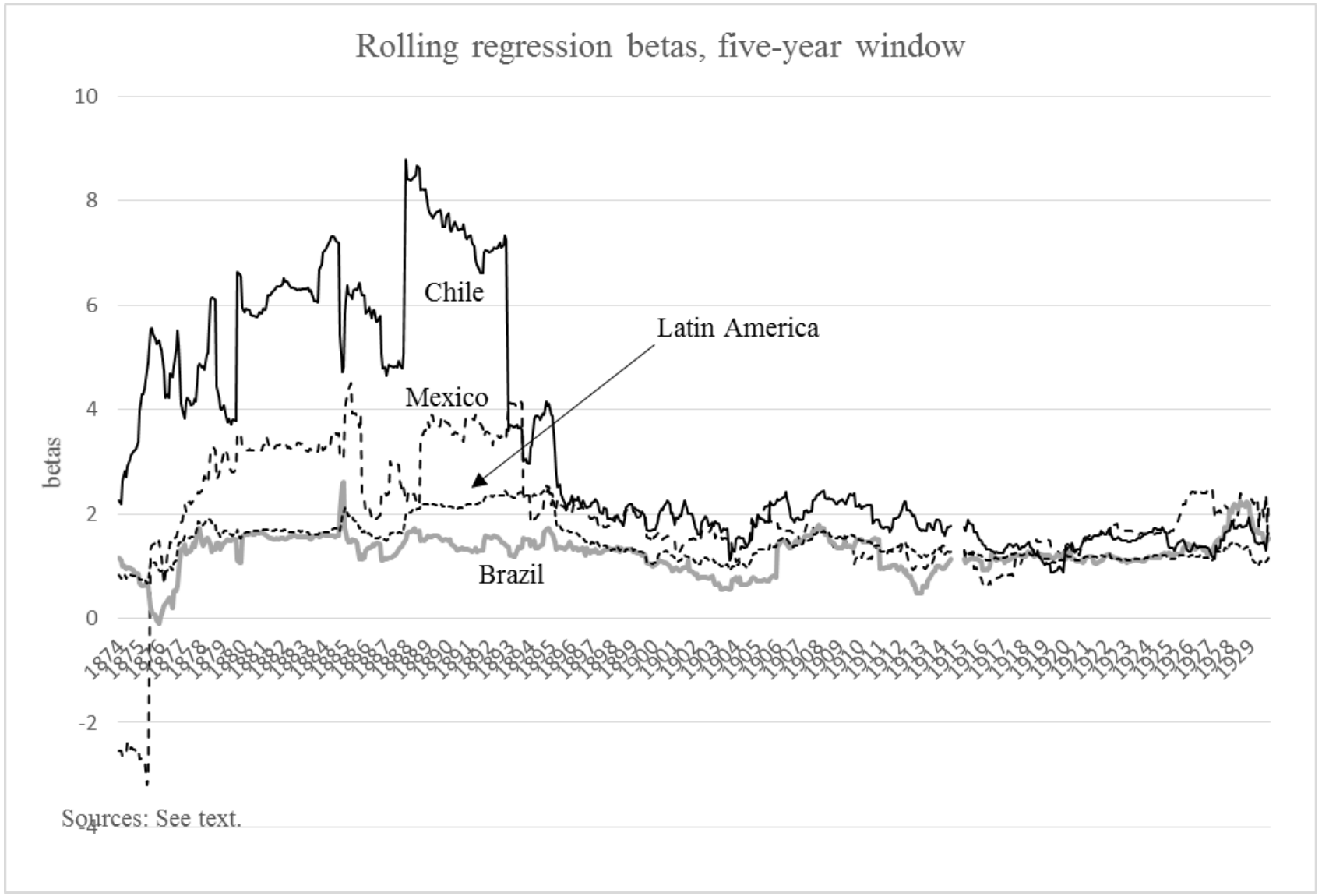
Rolling regression betas, five-year window
betas
10
8
6
4
2
0
-2
-4
Chile
Latin America
Mexico
Brazil
Sources: See text.

Figure 3

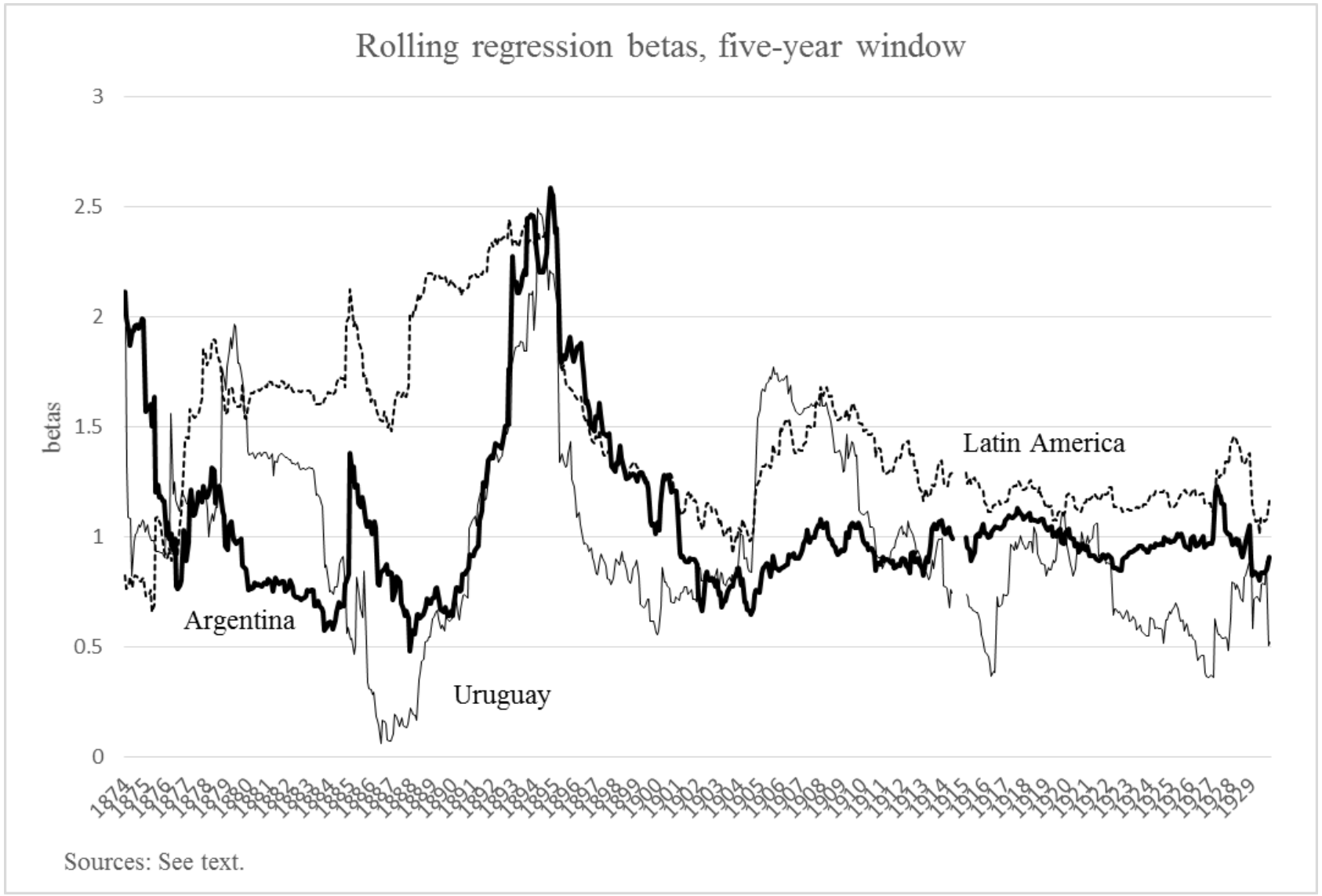
Rolling regression betas, five-year window
betas
3
2.5
2
1.5
1
0.5
0
Argentina
Uruguay
Latin America
Sources: See text.

Figure 4

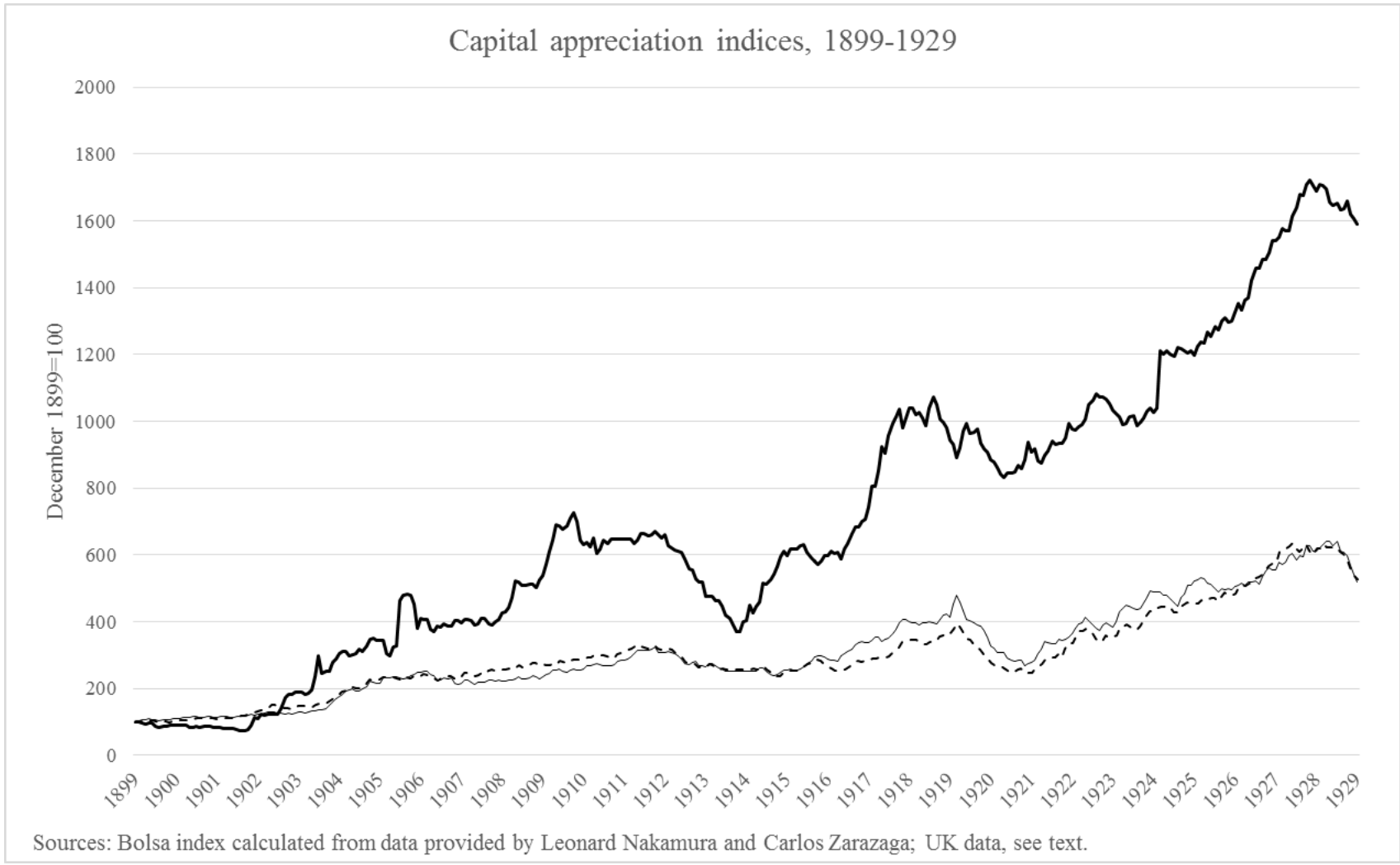
Capital appreciation indices, 1899-1929
December 1899=100
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
Sources: Bolsa index calculated from data provided by Leonard Nakamura and Carlos Zarazaga; UK data, see text.

Figure 5

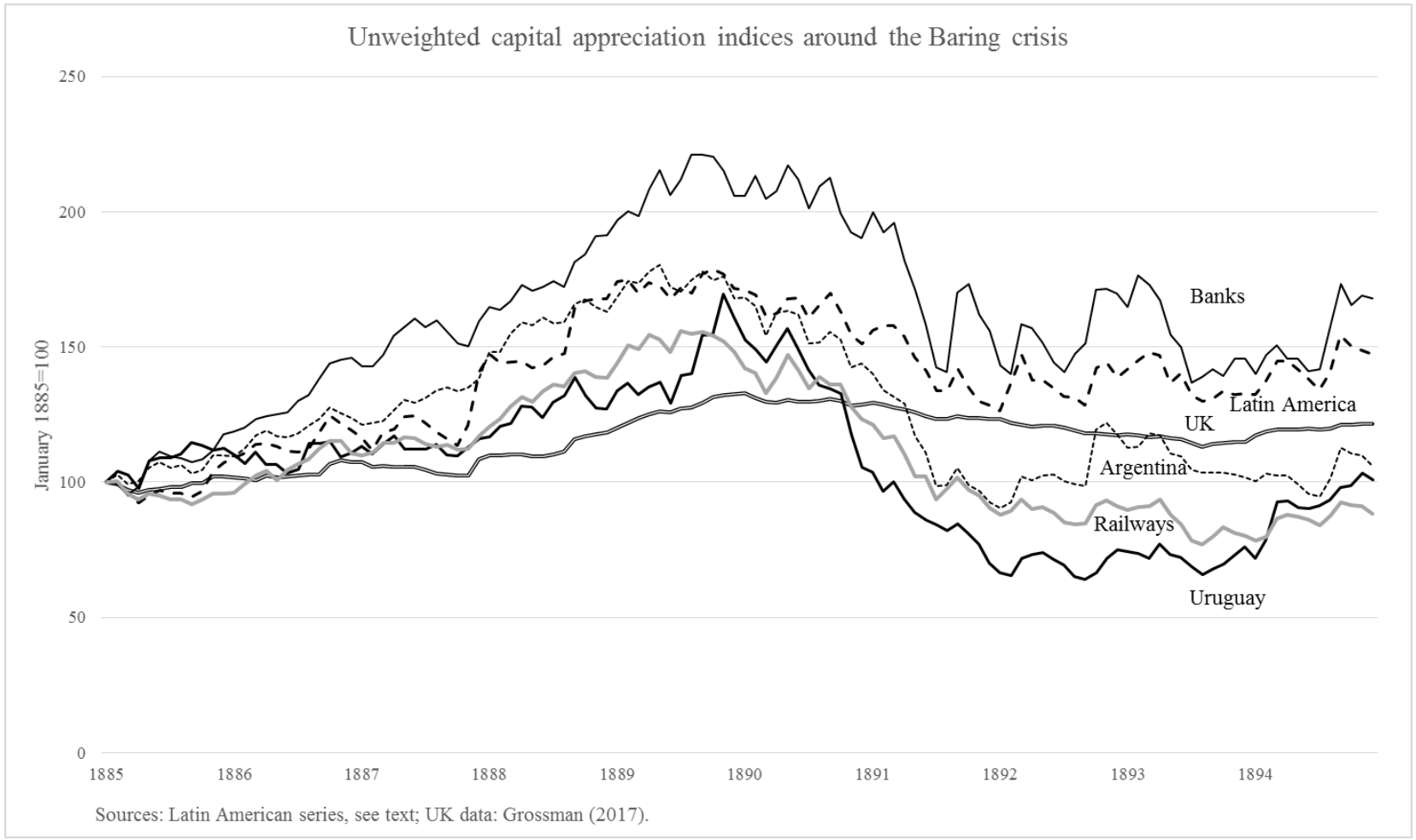
Unweighted capital appreciation indices around the Baring crisis
250
200
150
100
50
0
January 1885=100
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
Banks
Latin America
UK
Argentina
Railways
Uruguay
Sources: Latin American series, see text; UK data: Grossman (2017).

Table 1. UK-issued common equity of Latin-America based companies, averages of year+A1:H46s for selected countries

A. Number of issues

	1869	1879	1889	1899	1909	1919	1929
Argentina	5	9	18	28	32	35	29
Brazil	12	14	20	16	14	15	13
Chile	3	2	15	16	25	26	19
Colombia	1	1	4	4	2	2	4
Cuba		1	1	3	4	2	1
Mexico	5	4	8	4	7	5	6
Peru		3	3	3	2	2	3
Uruguay		2	5	7	9	10	9
Venezuela		1	2	3	1	3	4
Latin America	32	45	84	89	104	110	97
UK firms	465	578	678	754	740	619	565
All firms	636	827	1088	1309	1334	1243	1191

B. Market capitalization

	1869	1879	1889	1899	1909	1919	1929
Argentina	£2,802,660	£4,193,233	£22,555,441	£40,071,840	£63,005,046	£73,538,683	£103,197,818
Brazil	£3,050,232	£5,346,365	£12,772,027	£15,136,916	£35,349,324	£23,029,100	£29,296,044
Chile	£91,580	£239,696	£7,163,901	£3,420,599	£7,553,174	£11,778,092	£11,458,588
Colombia	£48,042	£127,142	£226,397	£368,213	£111,038	£184,250	£1,442,011
Cuba		£132,333	£256,111	£890,350	£5,809,139	£5,608,067	£2,394,211
Mexico	£1,052,373	£574,001	£2,507,105	£1,248,008	£5,204,641	£4,164,792	£3,912,895
Peru		£423,577	£472,051	£386,402	£1,149,029	£2,127,125	£3,711,967
Uruguay		£835,234	£4,800,029	£3,801,187	£5,142,756	£5,363,498	£9,393,779
Venezuela		£251,042	£453,625	£427,921	£191,042	£1,421,029	£15,714,893
Latin America	£9,600,101	£15,966,561	£55,445,777	£68,205,464	£128,153,171	£135,610,935	£197,375,578
UK firms	£296,956,205	£461,040,773	£688,397,925	£941,538,453	£867,908,283	£1,171,451,744	£2,077,060,491
All firms	£369,620,478	£591,025,108	£963,389,754	£1,465,963,974	£1,621,309,708	£1,996,122,338	£3,430,883,394

C. Paid-up capitalization

	1869	1879	1889	1899	1909	1919	1929
Argentina	£2,747,500	£5,408,730	£12,369,143	£34,508,601	£46,840,322	£84,862,756	£88,647,707
Brazil	£3,432,052	£6,832,719	£9,550,468	£15,359,020	£25,646,319	£20,873,355	£25,623,196
Chile	£562,953	£695,265	£5,217,059	£6,911,092	£8,792,718	£9,157,297	£14,630,700
Colombia	£96,500	£110,000	£435,009	£423,662	£290,000	£825,000	£1,749,921
Cuba		£160,000	£195,556	£920,000	£6,891,072	£7,595,150	£6,544,540
Mexico	£3,657,401	£3,904,420	£4,877,474	£3,684,720	£5,434,208	£5,212,220	£6,504,319
Peru	£116,250	£1,073,750	£1,028,524	£9,870,313	£9,275,000	£9,400,000	£10,400,000
Uruguay		£1,487,540	£3,334,008	£5,641,920	£6,369,350	£7,070,418	£9,019,957
Venezuela		£379,167	£574,917	£1,298,000	£350,000	£1,210,700	£5,622,252
Latin America	£13,021,671	£24,582,238	£43,459,839	£83,342,615	£117,108,504	£153,825,063	£180,812,175
UK firms	£290,478,653	£374,161,773	£445,587,704	£567,059,285	£651,818,229	£741,472,421	£945,226,512
All firms	£382,201,383	£521,996,836	£638,685,815	£883,269,852	£1,077,872,404	£1,264,948,812	£1,628,866,117

Sources: Latin American countries, see text; UK firms and all firms, Grossman (2017).

Table 2. UK-issued common equity of Latin-America based companies, averages of years for selected industries

A. Number of issues

	1869	1879	1889	1899	1909	1919	1929
Banks	7	6	6	7	6	6	1
Chemicals		1	8	11	19	20	15
Food			3	2	4	3	2
Gas, light, and waterworks	3	6	6	7	11	12	11
Land, mortgage, and financial	1	2	5	5	11	13	12
Mines	14	9	18	6	8	5	7
Oil					1	3	6
Railways	4	9	21	32	29	30	31
Shipping	2	3	4	3	2	1	1
Telegraph	1	5	8	6	6	7	1
Trams	1	3	4	4	3	2	1
Latin America	32	45	84	89	104	110	97
UK firms	465	578	678	754	740	619	565
All firms	636	827	1088	1309	1334	1243	1191

B. Market capitalization

	1869	1879	1889	1899	1909	1919	1929
Banks	£2,574,288	£2,778,432	£6,019,479	£6,757,250	£12,098,775	£11,765,989	£6,698,757
Chemicals		£165,375	£2,746,898	£2,115,684	£5,926,604	£9,037,368	£9,687,731
Food			£399,081	£360,750	£1,623,682	£5,755,643	£4,554,742
Gas, light, and waterworks	£1,422,083	£2,630,005	£2,827,771	£3,276,490	£20,377,582	£4,758,785	£15,539,721
Land, mortgage, and financial	£528,750	£114,714	£1,299,125	£1,478,563	£7,182,757	£9,950,540	£13,829,876
Mines	£1,464,672	£1,324,793	£2,059,437	£1,355,493	£3,273,925	£5,131,719	£4,428,514
Oil					£364,604	£4,682,043	£27,276,568
Railways	£2,428,864	£4,171,034	£31,991,194	£44,767,453	£68,784,431	£67,767,045	£91,452,643
Shipping	£1,132,278	£2,760,351	£2,105,991	£1,720,125	£1,586,982	£1,905,333	£1,885,333
Telegraph	£292,500	£1,461,674	£3,969,720	£3,853,898	£4,251,097	£7,209,430	£8,459,632
Trams	£99,167	£560,183	£1,975,016	£2,054,008	£1,869,883	£1,266,767	£1,078,387
Latin America	£9,600,101	£15,966,561	£55,445,777	£68,205,464	£128,153,171	£135,610,935	£197,375,578
UK firms	£296,956,205	£461,040,773	£688,397,925	£941,538,453	£867,908,283	£1,171,451,744	£2,077,060,491
All firms	£369,620,478	£591,025,108	£963,389,754	£1,465,963,974	£1,621,309,708	£1,996,122,338	£3,430,883,394

C. Paid-up capitalization

	1869	1879	1889	1899	1909	1919	1929
Banks	£2,762,740	£3,399,000	£3,116,667	£4,000,000	£5,180,000	£5,642,430	£4,367,330
Chemicals		£190,000	£1,220,211	£13,085,050	£14,472,583	£14,317,696	£19,243,950
Food			£424,625	£435,000	£1,206,194	£5,107,220	£1,989,840
Gas, light, and waterworks	£1,687,500	£2,627,223	£2,309,391	£4,135,765	£14,506,789	£7,128,431	£10,552,106
Land, mortgage, and financial	£600,000	£316,233	£1,252,632	£1,819,735	£3,328,651	£5,872,991	£8,940,234
Mines	£2,751,869	£2,860,286	£5,367,960	£978,290	£2,800,305	£2,964,778	£3,988,364
Oil					£275,000	£1,341,583	£8,850,612
Railways	£4,056,455	£7,559,670	£21,286,110	£49,301,264	£66,483,613	£96,111,552	£105,696,104
Shipping	£1,072,481	£3,129,650	£2,244,243	£2,052,675	£1,982,363	£1,600,000	£1,600,000
Telegraph	£270,833	£3,873,960	£4,474,102	£3,931,552	£4,015,190	£5,541,096	£3,118,950
Trams	£91,667	£626,217	£1,544,235	£2,073,285	£1,726,000	£1,740,000	£1,240,000
Latin America	£13,021,671	£24,582,238	£43,459,839	£83,342,615	£117,108,504	£153,825,063	£180,812,175
UK firms	£290,478,653	£374,161,773	£445,587,704	£567,059,285	£651,818,229	£741,472,421	£945,226,512
All firms	£382,201,383	£521,996,836	£638,685,815	£883,269,852	£1,077,872,404	£1,264,948,812	£1,628,866,117

Sources: Latin American countries, see text; UK firms and all firms, Grossman (2017).

Table 3: Distribution of equity securities by industry within countries (percent), 1869-1929

Panel A: Number of issues

	Argentina	Brazil	Chile	Colombia	Cuba	Mexico	Peru	Uruguay	Venezuela	Other	All
Banks	10.5	8.5	0.0	0.0	0.0	14.4	1.9	0.0	0.0	13.5	6.8
Chemicals	2.6	0.1	59.3	0.0	0.0	0.0	40.0	0.0	0.0	1.5	13.2
Food	6.2	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Gas, light, and waterworks	10.8	23.1	4.1	0.0	0.0	1.7	0.0	26.1	0.0	0.0	10.1
Land, mortgage, and financial	26.3	0.0	0.1	0.0	0.0	6.9	0.0	0.0	0.0	5.6	8.7
Mines	1.1	13.8	14.6	65.6	0.0	47.1	4.0	0.0	9.1	8.6	11.6
Oil	0.0	0.0	0.0	0.0	0.0	0.0	11.3	0.0	5.9	9.5	1.4
Railways	25.4	18.1	18.4	15.9	44.1	28.4	22.0	63.1	82.6	32.8	27.7
Shipping	1.1	5.0	0.0	0.0	0.0	0.0	18.6	0.0	0.0	10.0	2.8
Tea, coffee, and rubber	0.2	5.3	0.0	0.0	13.2	0.0	0.0	0.0	0.0	0.0	1.4
Telegraph	2.6	13.4	3.5	0.0	42.7	0.0	0.0	6.1	0.0	15.1	6.8
Trams	7.0	2.9	0.0	18.5	0.0	0.0	0.0	4.8	0.0	0.0	3.5
Miscellaneous	6.2	4.5	0.0	0.0	0.0	1.4	2.2	0.0	2.5	3.3	3.2

Panel B: Market capitalization

	Argentina	Brazil	Chile	Colombia	Cuba	Mexico	Peru	Uruguay	Venezuela	Other	All
Banks	10.7	9.6	0.0	0.0	0.0	13.7	1.4	0.0	0.0	14.7	8.9
Chemicals	1.0	0.0	60.5	0.0	0.0	0.0	36.3	0.0	0.0	0.1	5.7
Food	2.6	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Gas, light, and waterworks	3.3	18.7	3.6	0.0	0.0	0.5	0.0	28.4	0.0	0.0	7.2
Land, mortgage, and financial	9.9	0.0	0.2	0.0	0.0	1.6	0.0	0.0	0.0	2.0	5.3
Mines	0.0	2.6	5.2	55.4	0.0	46.7	1.0	0.0	2.9	4.5	2.8
Oil	0.0	0.0	0.0	0.0	0.0	0.0	46.7	0.0	64.9	17.2	2.7
Railways	62.8	36.5	26.5	32.8	92.0	37.4	11.6	67.7	31.5	34.3	51.6
Shipping	0.7	1.6	0.0	0.0	0.0	0.0	2.7	0.0	0.0	22.1	2.2
Tea, coffee, and rubber	0.0	0.6	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.2
Telegraph	2.9	15.8	4.0	0.0	6.3	0.0	0.0	1.6	0.0	3.2	5.7
Trams	2.9	0.1	0.0	11.9	0.0	0.0	0.0	2.2	0.0	0.0	1.7
Miscellaneous	3.0	8.4	0.0	0.0	0.0	0.1	0.3	0.0	0.7	1.9	3.5

Panel C: Paid-up capitalization

	Argentina	Brazil	Chile	Colombia	Cuba	Mexico	Peru	Uruguay	Venezuela	Other	All
Banks	6.5	5.9	0.0	0.0	0.0	5.7	0.7	0.0	0.0	9.2	5.0
Chemicals	1.0	0.0	51.0	0.0	0.0	0.0	87.7	0.0	0.0	0.2	10.6
Food	2.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Gas, light, and waterworks	3.8	18.9	3.2	0.0	0.0	0.7	0.0	23.1	0.0	0.0	6.5
Land, mortgage, and financial	7.1	0.0	0.1	0.0	0.0	2.0	0.0	0.0	0.0	4.2	3.6
Mines	0.1	3.2	10.6	45.0	0.0	32.3	0.4	0.0	16.7	2.4	3.7
Oil	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	18.7	6.8	0.9
Railways	69.7	40.6	32.0	42.3	93.1	59.2	7.7	72.9	62.8	43.8	55.6
Shipping	1.1	2.3	0.0	0.0	0.0	0.0	0.9	0.0	0.0	17.9	2.3
Tea, coffee, and rubber	0.0	1.6	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.3
Telegraph	2.1	15.4	3.1	0.0	5.3	0.0	0.0	1.1	0.0	13.4	5.0
Trams	3.1	0.3	0.0	12.7	0.0	0.0	0.0	3.0	0.0	0.0	1.7
Miscellaneous	3.0	9.4	0.0	0.0	0.0	0.1	0.1	0.0	1.8	2.0	3.2

Sources: See text.

Other countries include Anguilla, Bolivia, Costa Rica, Ecuador, Guyana, Jamaica, Nicaragua, Paraguay, El Salvador, Trinidad and Tobago, and multinationa

Miscellaneous sectors include breweries and distilleries, canals, coal, manufacturing, retail, trusts, and warehouses.

Table 4: Monthly average (and annuaA1:J61l equivalnt) and standard devia+A1:Z62tion of capital gains by decade, by sector and country

A: Unweighted

	1869-1878			1879-1888			1889-1898			1899-1908			1909-1918			1919-1928			1929			1869-1929		
	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual
Banks	0.001	0.037	0.013	0.008	0.036	0.096	0.002	0.046	0.025	0.004	0.023	0.052	0.005	0.029	0.059	0.002	0.033	0.021	-0.013	0.030	-0.144	0.003	0.035	0.040
Chemicals	0.004	0.092	0.050	-0.003	0.061	-0.036	-0.008	0.093	-0.093	0.012	0.058	0.154	0.007	0.046	0.087	0.003	0.078	0.041	-0.028	0.045	-0.286	0.002	0.073	0.024
Food				-0.006	0.044	-0.066	-0.002	0.063	-0.018	0.016	0.067	0.205	0.009	0.056	0.113	0.004	0.081	0.047	-0.037	0.064	-0.362	0.004	0.066	0.053
Gas, light, and waterworks	0.002	0.029	0.029	0.006	0.027	0.071	-0.003	0.038	-0.031	0.006	0.022	0.068	0.002	0.021	0.019	0.005	0.034	0.067	0.011	0.061	0.138	0.003	0.030	0.038
Land, mortgage, and financial	0.002	0.114	0.019	0.008	0.050	0.106	0.000	0.068	-0.002	0.012	0.040	0.150	0.004	0.032	0.043	0.003	0.033	0.035	-0.015	0.017	-0.163	0.004	0.062	0.054
Mines	0.007	0.072	0.093	0.012	0.114	0.157	0.014	0.109	0.188	0.012	0.115	0.148	0.002	0.073	0.022	0.000	0.072	-0.002	-0.002	0.109	-0.025	0.008	0.095	0.098
Railways	0.004	0.040	0.044	0.011	0.038	0.135	-0.002	0.037	-0.024	0.006	0.032	0.076	0.008	0.028	0.097	0.005	0.037	0.062	-0.016	0.039	-0.171	0.005	0.036	0.059
Telegraphs	-0.004	0.064	-0.050	0.011	0.050	0.147	0.002	0.046	0.027	0.002	0.039	0.024	0.005	0.029	0.068	0.002	0.039	0.024	-0.001	0.035	-0.012	0.003	0.046	0.040
Trams	0.001	0.074	0.018	0.007	0.038	0.090	-0.002	0.056	-0.020	0.008	0.036	0.102	-0.003	0.035	-0.040	0.003	0.046	0.040	-0.004	0.011	-0.043	0.002	0.048	0.030
Argentina	0.002	0.040	0.021	0.008	0.034	0.100	0.001	0.042	0.014	0.008	0.022	0.106	0.003	0.020	0.034	0.005	0.027	0.065	-0.013	0.018	-0.146	0.004	0.032	0.053
Brazil	-0.004	0.046	-0.045	0.006	0.041	0.072	0.002	0.040	0.023	0.007	0.037	0.088	0.004	0.034	0.043	0.004	0.045	0.046	-0.008	0.046	-0.095	0.003	0.041	0.035
Chile	0.008	0.120	0.095	0.028	0.167	0.400	-0.006	0.083	-0.069	0.011	0.055	0.146	0.007	0.041	0.088	0.003	0.067	0.039	-0.024	0.040	-0.251	0.008	0.099	0.102
Mexico	0.010	0.112	0.121	0.016	0.103	0.205	0.000	0.083	-0.001	0.005	0.048	0.065	0.008	0.062	0.095	-0.006	0.061	-0.069	-0.011	0.165	-0.126	0.005	0.084	0.062
Uruguay	-0.003	0.044	-0.030	0.009	0.037	0.112	-0.004	0.045	-0.045	0.003	0.032	0.032	0.008	0.041	0.102	0.004	0.036	0.050	-0.004	0.020	-0.046	0.003	0.039	0.038
All Latin America	0.003	0.029	0.040	0.009	0.037	0.109	0.000	0.034	0.002	0.007	0.026	0.088	0.005	0.022	0.067	0.004	0.030	0.049	-0.013	0.028	-0.147	0.004	0.030	0.055
UK firms	0.003	0.011	0.032	0.002	0.014	0.025	0.003	0.009	0.035	-0.001	0.008	-0.015	0.006	0.013	0.070	0.003	0.019	0.042	-0.012	0.015	-0.131	0.002	0.013	0.028
All firms	0.003	0.012	0.038	0.003	0.016	0.038	0.003	0.014	0.040	0.001	0.014	0.009	0.005	0.015	0.062	0.004	0.020	0.045	-0.011	0.022	-0.129	0.003	0.016	0.035

B: Weighted by market capitalization

	1869-1878			1879-1888			1889-1898			1899-1908			1909-1918			1919-1928			1929			1869-1929		
	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual
Banks	0.003	0.032	0.041	0.008	0.033	0.101	0.004	0.036	0.047	0.004	0.022	0.043	0.004	0.031	0.053	0.000	0.037	0.004	-0.013	0.030	-0.144	0.004	0.032	0.044
Chemicals	0.010	0.100	0.127	0.000	0.068	-0.002	-0.007	0.080	-0.076	0.013	0.058	0.165	0.009	0.040	0.108	0.005	0.072	0.064	-0.025	0.069	-0.266	0.004	0.071	0.052
Food				-0.007	0.041	-0.086	0.002	0.063	0.026	0.018	0.069	0.237	0.007	0.046	0.091	0.002	0.036	0.029	-0.040	0.045	-0.385	0.005	0.055	0.058
Gas, light, and waterworks	0.002	0.029	0.027	0.005	0.028	0.058	0.000	0.041	-0.002	0.007	0.028	0.081	0.004	0.030	0.044	0.010	0.033	0.126	0.006	0.052	0.073	0.005	0.032	0.055
Land, mortgage, and financial	0.000	0.115	-0.003	0.013	0.063	0.170	0.006	0.067	0.077	0.013	0.047	0.171	0.006	0.034	0.071	0.005	0.049	0.066	-0.016	0.022	-0.174	0.007	0.067	0.087
Mines	0.016	0.056	0.207	0.024	0.108	0.326	0.033	0.135	0.478	0.017	0.116	0.227	0.005	0.056	0.064	0.004	0.060	0.052	0.002	0.023	0.020	0.016	0.094	0.216
Railways	0.002	0.030	0.019	0.012	0.030	0.150	0.000	0.033	-0.006	0.004	0.020	0.043	0.000	0.027	0.002	0.005	0.039	0.057	-0.010	0.027	-0.112	0.003	0.030	0.041
Telegraphs	-0.004	0.058	-0.046	0.009	0.035	0.120	0.003	0.029	0.040	0.000	0.021	0.002	0.004	0.018	0.044	0.006	0.037	0.073	-0.001	0.035	-0.012	0.003	0.035	0.039
Trams	0.000	0.064	0.005	0.008	0.032	0.104	0.001	0.072	0.014	0.007	0.027	0.082	-0.002	0.019	-0.026	0.002	0.023	0.026	-0.004	0.011	-0.043	0.003	0.043	0.034
Argentina	0.003	0.032	0.034	0.009	0.025	0.114	0.000	0.038	-0.001	0.004	0.019	0.052	0.001	0.023	0.014	0.006	0.032	0.072	-0.010	0.023	-0.118	0.004	0.029	0.044
Brazil	0.003	0.025	0.041	0.005	0.023	0.068	0.003	0.034	0.038	0.004	0.021	0.051	0.006	0.027	0.074	0.003	0.032	0.037	-0.012	0.024	-0.137	0.004	0.027	0.048
Chile	0.016	0.141	0.217	0.032	0.158	0.465	0.000	0.071	-0.001	0.011	0.049	0.140	0.009	0.034	0.109	0.005	0.063	0.063	-0.022	0.049	-0.239	0.012	0.098	0.150
Mexico	0.006	0.072	0.080	0.026	0.107	0.353	0.004	0.061	0.049	0.009	0.049	0.110	0.006	0.054	0.077	0.002	0.072	0.020	0.001	0.027	0.014	0.009	0.071	0.109
Uruguay	-0.002	0.044	-0.029	0.011	0.039	0.137	-0.001	0.046	-0.014	0.003	0.032	0.035	0.002	0.024	0.024	0.004	0.029	0.054	0.000	0.033	-0.002	0.003	0.036	0.037
All Latin America	0.004	0.020	0.050	0.009	0.023	0.120	0.002	0.029	0.021	0.005	0.018	0.062	0.003	0.020	0.041	0.005	0.028	0.066	-0.012	0.023	-0.130	0.005	0.023	0.056
UK firms	0.003	0.013	0.040	0.003	0.012	0.034	0.003	0.009	0.038	0.000	0.012	0.005	0.004	0.014	0.043	0.005	0.023	0.066	-0.008	0.021	-0.090	0.003	0.015	0.035
All firms	0.004	0.013	0.044	0.004	0.013	0.055	0.004	0.013	0.053	0.002	0.015	0.026	0.004	0.015	0.051	0.005	0.022	0.068	-0.007	0.021	-0.079	0.004	0.016	0.047

C: Weighted by paid up cpaitalization

	1869-1878			1879-1888			1889-1898			1899-1908			1909-1918			1919-1928			1929			1869-1929		
	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual	Average	SD	Annual
Banks	0.002	0.040	0.021	0.008	0.047	0.107	0.002	0.039	0.019	0.004	0.023	0.050	0.004	0.030	0.054	0.000	0.035	0.004	-0.013	0.030	-0.144	0.003	0.036	0.039
Chemicals	0.006	0.104	0.080	-0.003	0.057	-0.040	-0.015	0.102	-0.166	0.016	0.101	0.205	0.005	0.059	0.066	0.008	0.074	0.095	-0.037	0.066	-0.365	0.002	0.085	0.023
Food				-0.007	0.038	-0.080	-0.002	0.065	-0.022	0.015	0.071	0.202	0.008	0.054	0.098	0.003	0.057	0.039	-0.038	0.052	-0.373	0.004	0.060	0.045
Gas, light, and waterworks	0.001	0.026	0.015	0.004	0.027	0.051	-0.003	0.053	-0.034	0.007	0.031	0.085	0.003	0.030	0.031	0.008	0.046	0.101	0.008	0.055	0.098	0.003	0.037	0.042
Land, mortgage, and financial	0.000	0.101	-0.006	0.008	0.053	0.099	0.003	0.094	0.033	0.012	0.045	0.150	0.004	0.031	0.045	0.003	0.054	0.039	-0.021	0.026	-0.229	0.004	0.067	0.054
Mines	0.010	0.087	0.131	0.014	0.105	0.181	0.013	0.160	0.170	0.011	0.098	0.140	0.004	0.071	0.052	0.000	0.079	-0.003	-0.002	0.065	-0.018	0.009	0.104	0.108
Railways	-0.002	0.053	-0.023	0.014	0.048	0.182	-0.002	0.038	-0.022	0.004	0.025	0.052	0.001	0.028	0.007	0.004	0.039	0.048	-0.013	0.033	-0.148	0.003	0.040	0.036
Telegraphs	-0.006	0.064	-0.068	0.009	0.051	0.118	0.003	0.045	0.042	0.001	0.048	0.013	0.006	0.033	0.080	0.004	0.044	0.045	-0.001	0.035	-0.012	0.003	0.048	0.038
Trams	-0.001	0.059	-0.009	0.008	0.033	0.094	0.000	0.073	0.000	0.006	0.026	0.080	-0.002	0.022	-0.030	0.002	0.029	0.026	-0.004	0.011	-0.043	0.002	0.044	0.027
Argentina	0.001	0.036	0.016	0.008	0.032	0.099	-0.002	0.041	-0.020	0.004	0.020	0.051	0.000	0.026	-0.004	0.005	0.036	0.061	-0.012	0.024	-0.138	0.003	0.033	0.031
Brazil	0.000	0.027	0.003	0.005	0.027	0.062	0.001	0.035	0.013	0.005	0.025	0.060	0.004	0.026	0.050	0.003	0.044	0.039	-0.011	0.041	-0.125	0.003	0.032	0.035
Chile	0.008	0.113	0.103	0.019	0.132	0.261	-0.003	0.081	-0.041	0.010	0.061	0.129	0.007	0.034	0.083	0.002	0.060	0.023	-0.031	0.054	-0.311	0.007	0.087	0.081
Mexico	0.002	0.090	0.021	0.022	0.109	0.304	-0.001	0.073	-0.009	0.008	0.072	0.102	0.006	0.058	0.069	-0.004	0.076	-0.049	-0.025	0.091	-0.262	0.005	0.082	0.062
Uruguay	-0.002	0.044	-0.021	0.010	0.039	0.133	-0.003	0.048	-0.036	0.003	0.038	0.034	0.004	0.029	0.051	0.004	0.036	0.048	-0.003	0.030	-0.034	0.003	0.039	0.036
All Latin America	0.001	0.029	0.017	0.009	0.032	0.119	-0.002	0.038	-0.019	0.006	0.030	0.080	0.002	0.023	0.029	0.004	0.032	0.052	-0.015	0.031	-0.171	0.003	0.031	0.042
UK firms	0.002	0.015	0.028	0.002	0.015	0.022	0.002	0.012	0.028	-0.001	0.016	-0.014	0.003	0.018	0.035	0.001	0.026	0.013	-0.009	0.021	-0.099	0.001	0.018	0.016
All firms	0.002	0.016	0.026	0.003	0.017	0.039	0.002	0.015	0.026	0.001	0.018	0.007	0.003	0.018	0.033	0.002	0.024	0.022	-0.009	0.021	-0.104	0.002	0.018	0.023

Sources: See text, Grossman (2017).

Note: Annual capital gain is calculated as (1+monthly capital gain)^{12} - 1

Table 5: Monthly average and standard deviation of dividends (at annual rates) by decade, by sector and country

A: Unweighted

	1869-1878		1879-1888		1889-1898		1899-1908		1919-1918		1919-1928		1929		1869-1929	
	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD
Banks	0.069	0.016	0.058	0.007	0.072	0.013	0.062	0.006	0.057	0.006	0.066	0.010	0.065	0.004	0.064	0.012
Chemicals	0.029	0.033	0.049	0.031	0.054	0.029	0.070	0.023	0.052	0.017	0.064	0.030	0.021	0.006	0.054	0.030
Food			0.004	0.009	0.047	0.027	0.070	0.039	0.071	0.024	0.035	0.019	0.032	0.004	0.049	0.035
Gas, light, and waterworks	0.059	0.009	0.063	0.010	0.059	0.011	0.058	0.005	0.050	0.006	0.045	0.010	0.041	0.007	0.056	0.011
Land, mortgage, and financial	0.069	0.030	0.032	0.018	0.036	0.014	0.041	0.006	0.037	0.007	0.054	0.015	0.052	0.002	0.045	0.021
Mines	0.025	0.021	0.026	0.022	0.041	0.017	0.047	0.032	0.063	0.026	0.069	0.017	0.103	0.019	0.046	0.029
Railways	0.042	0.016	0.031	0.010	0.040	0.006	0.042	0.005	0.037	0.006	0.044	0.008	0.047	0.003	0.039	0.010
Telegraphs	0.021	0.018	0.037	0.009	0.047	0.011	0.052	0.013	0.054	0.005	0.054	0.007	0.037	0.001	0.044	0.016
Trams	0.048	0.026	0.050	0.011	0.044	0.020	0.047	0.015	0.042	0.014	0.047	0.020	0.055	0.004	0.046	0.018
Argentina	0.050	0.016	0.032	0.006	0.039	0.008	0.048	0.007	0.047	0.005	0.051	0.012	0.051	0.004	0.045	0.012
Brazil	0.039	0.015	0.051	0.006	0.052	0.009	0.056	0.007	0.055	0.008	0.047	0.012	0.039	0.004	0.045	0.011
Chile	0.003	0.009	0.025	0.018	0.054	0.021	0.068	0.015	0.050	0.014	0.063	0.024	0.030	0.008	0.045	0.029
Mexico	0.058	0.035	0.035	0.033	0.023	0.012	0.036	0.009	0.041	0.026	0.049	0.014	0.068	0.022	0.041	0.026
Uruguay	0.058	0.025	0.047	0.021	0.046	0.009	0.050	0.004	0.047	0.004	0.056	0.009	0.052	0.003	0.050	0.014
All Latin America	0.041	0.009	0.039	0.009	0.046	0.006	0.052	0.006	0.046	0.007	0.051	0.010	0.046	0.005	0.046	0.009
UK firms	0.056	0.007	0.039	0.003	0.045	0.005	0.053	0.005	0.058	0.005	0.060	0.012	0.050	0.003	0.052	0.010
All firms	0.055	0.006	0.039	0.004	0.047	0.004	0.053	0.005	0.060	0.005	0.061	0.009	0.054	0.003	0.052	0.009

B: Weighted by market capitalization

	1869-1878		1879-1888		1889-1898		1899-1908		1919-1918		1919-1928		1929.000		1869-1929	
	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD
Banks	0.075	0.008	0.066	0.006	0.069	0.010	0.060	0.005	0.060	0.006	0.069	0.011	0.065	0.004	0.067	0.009
Chemicals	0.038	0.039	0.048	0.034	0.057	0.030	0.064	0.022	0.057	0.014	0.070	0.040	0.034	0.009	0.056	0.032
Food			0.009	0.019	0.052	0.029	0.078	0.042	0.072	0.031	0.053	0.008	0.061	0.008	0.057	0.035
Gas, light, and waterworks	0.065	0.007	0.064	0.008	0.056	0.010	0.058	0.011	0.057	0.006	0.057	0.017	0.038	0.007	0.059	0.011
Land, mortgage, and financial	0.073	0.029	0.049	0.023	0.056	0.016	0.049	0.009	0.055	0.013	0.058	0.021	0.057	0.004	0.056	0.021
Mines	0.029	0.017	0.036	0.014	0.051	0.016	0.070	0.031	0.093	0.037	0.086	0.027	0.132	0.014	0.062	0.036
Railways	0.054	0.014	0.045	0.007	0.047	0.006	0.052	0.005	0.050	0.005	0.067	0.017	0.071	0.004	0.053	0.013
Telegraphs	0.025	0.027	0.048	0.009	0.052	0.009	0.052	0.006	0.054	0.006	0.054	0.007	0.037	0.001	0.048	0.016
Trams	0.064	0.022	0.053	0.005	0.040	0.017	0.047	0.008	0.050	0.005	0.056	0.007	0.055	0.004	0.051	0.014
Argentina	0.063	0.012	0.049	0.005	0.045	0.008	0.052	0.005	0.054	0.006	0.064	0.017	0.066	0.005	0.054	0.012
Brazil	0.056	0.012	0.059	0.005	0.059	0.007	0.058	0.009	0.056	0.005	0.057	0.010	0.057	0.007	0.058	0.008
Chile	0.002	0.007	0.027	0.019	0.074	0.025	0.071	0.013	0.058	0.012	0.069	0.033	0.051	0.015	0.050	0.033
Mexico	0.042	0.016	0.039	0.034	0.031	0.014	0.042	0.012	0.055	0.034	0.085	0.030	0.133	0.016	0.051	0.032
Uruguay	0.058	0.025	0.047	0.017	0.050	0.010	0.053	0.005	0.054	0.006	0.075	0.013	0.060	0.006	0.056	0.016
All Latin America	0.056	0.006	0.051	0.005	0.050	0.005	0.054	0.006	0.054	0.004	0.062	0.012	0.062	0.006	0.055	0.008
UK firms	0.056	0.007	0.039	0.003	0.045	0.005	0.053	0.005	0.058	0.005	0.060	0.012	0.050	0.003	0.052	0.010
All firms	0.055	0.006	0.039	0.004	0.047	0.004	0.053	0.005	0.060	0.005	0.061	0.009	0.054	0.003	0.052	0.009

C: Weighted by paid-up capitalization

	1869-1878		1879-1888		1889-1898		1899-1908		1919-1918		1919-1928		1929.000		1869-1929	
Grand Total	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD
Banks	0.064	0.016	0.052	0.007	0.071	0.011	0.062	0.006	0.061	0.006	0.068	0.010	0.065	0.004	0.063	0.011
Chemicals	0.030	0.036	0.049	0.032	0.026	0.022	0.024	0.010	0.021	0.005	0.030	0.020	0.016	0.003	0.030	0.024
Food			0.006	0.012	0.044	0.026	0.074	0.048	0.071	0.031	0.040	0.017	0.044	0.006	0.051	0.038
Gas, light, and waterworks	0.058	0.009	0.062	0.010	0.050	0.013	0.056	0.011	0.051	0.009	0.040	0.010	0.037	0.007	0.053	0.013
Land, mortgage, and financial	0.068	0.028	0.035	0.033	0.041	0.019	0.041	0.007	0.046	0.009	0.053	0.022	0.058	0.005	0.047	0.024
Mines	0.011	0.008	0.019	0.011	0.024	0.012	0.069	0.037	0.073	0.033	0.072	0.025	0.156	0.023	0.046	0.038
Railways	0.036	0.012	0.039	0.013	0.039	0.006	0.046	0.005	0.046	0.006	0.061	0.017	0.065	0.003	0.045	0.014
Telegraphs	0.019	0.021	0.034	0.010	0.049	0.008	0.048	0.012	0.050	0.008	0.051	0.005	0.037	0.001	0.042	0.016
Trams	0.046	0.023	0.052	0.007	0.038	0.017	0.045	0.009	0.046	0.006	0.053	0.012	0.055	0.004	0.047	0.014
Argentina	0.056	0.015	0.042	0.004	0.039	0.009	0.049	0.005	0.049	0.007	0.061	0.018	0.068	0.005	0.050	0.014
Brazil	0.045	0.012	0.053	0.007	0.055	0.009	0.054	0.012	0.052	0.010	0.047	0.012	0.055	0.006	0.051	0.011
Chile	0.002	0.007	0.019	0.014	0.057	0.018	0.064	0.016	0.050	0.010	0.060	0.028	0.043	0.011	0.042	0.028
Mexico	0.014	0.005	0.032	0.033	0.014	0.012	0.023	0.008	0.034	0.026	0.036	0.016	0.081	0.011	0.026	0.022
Uruguay	0.058	0.026	0.048	0.017	0.050	0.009	0.050	0.005	0.049	0.007	0.066	0.013	0.058	0.005	0.053	0.015
All Latin America	0.040	0.005	0.041	0.008	0.039	0.005	0.045	0.006	0.046	0.005	0.054	0.013	0.057	0.005	0.044	0.009
UK firms	0.044	0.003	0.038	0.002	0.036	0.004	0.041	0.004	0.050	0.007	0.057	0.013	0.047	0.003	0.044	0.010
All firms	0.045	0.005	0.039	0.003	0.038	0.004	0.042	0.004	0.050	0.005	0.056	0.010	0.050	0.003	0.045	0.009

Sources: See text, Grossman (2017)..

Table 6

CAPM regressions, by countries/sectors																							
	Unweighted capital appreciation minus risk free rate							Capital appreciation weighted by market capitalization minus risk free rate							Capital apreciation weighted by paid-up capitalization minus risk free rate							
Sector/Country	Beta	SE	Constant	SE		Obs	R-squared	Beta	SE	Constant	SE		Obs	R-squared	Beta	SE	Constant	SE		Obs	R-squared	
Banks	0.988***	(0.0740)	0.000419	(0.00116)		723	0.198	0.816***	(0.0703)	-2.28e-05	(0.00110)		723	0.158	0.811***	(0.0682)	0.00108	(0.00124)		723	0.164	
Chemicals	1.611***	(0.165)	-0.000519	(0.00260)		685	0.123	1.346***	(0.164)	0.000229	(0.00258)		685	0.090	1.790***	(0.165)	0.00116	(0.00301)		685	0.147	
Food	0.771***	(0.173)	0.00159	(0.00277)		546	0.035	0.463***	(0.143)	0.00154	(0.00232)		546	0.019	0.399***	(0.139)	0.00141	(0.00258)		546	0.015	
Gas, light, and waterworks	0.768***	(0.0653)	0.000275	(0.00102)		724	0.161	0.715***	(0.0722)	0.000972	(0.00113)		724	0.120	0.684***	(0.0723)	0.00121	(0.00131)		724	0.110	
Land, mortgage, and financial	1.026***	(0.141)	0.00143	(0.00222)		715	0.069	0.883***	(0.155)	0.00324	(0.00244)		715	0.043	0.736***	(0.135)	0.00225	(0.00246)		715	0.040	
Mines	2.289***	(0.209)	0.00479	(0.00327)		724	0.143	1.310***	(0.219)	0.0123***	(0.00343)		724	0.047	1.593***	(0.204)	0.00722*	(0.00370)		724	0.078	
Railways	1.334***	(0.0688)	0.00189*	(0.00108)		724	0.343	1.005***	(0.0622)	-0.000510	(0.000974)		724	0.265	1.235***	(0.0679)	0.00122	(0.00123)		724	0.314	
Telegraph	0.935***	(0.105)	0.000206	(0.00163)		705	0.102	0.675***	(0.0816)	-0.000405	(0.00127)		705	0.089	0.795***	(0.0949)	0.000928	(0.00172)		705	0.091	
Trams	0.681***	(0.112)	-0.000353	(0.00178)		693	0.051	0.608***	(0.103)	-0.000654	(0.00162)		693	0.048	0.528***	(0.0892)	-7.77e-05	(0.00163)		693	0.048	
Argentina	1.043***	(0.0652)	0.00140	(0.00102)		724	0.262	0.842***	(0.0613)	-4.22e-05	(0.000960)		724	0.207	0.901***	(0.0579)	0.000508	(0.00105)		724	0.251	
Brazil	1.257***	(0.0847)	-5.95e-05	(0.00133)		724	0.234	0.840***	(0.0571)	0.000225	(0.000893)		724	0.231	0.957***	(0.0546)	0.000880	(0.000992)		724	0.299	
Chile	2.890***	(0.208)	0.00503	(0.00325)		724	0.211	1.972***	(0.221)	0.00687**	(0.00347)		724	0.099	1.704***	(0.166)	0.00524*	(0.00302)		724	0.127	
Mexico	1.879***	(0.186)	0.00207	(0.00292)		724	0.123	1.685***	(0.158)	0.00413*	(0.00248)		724	0.136	1.996***	(0.150)	0.00395	(0.00272)		724	0.197	
Uruguay	0.920***	(0.0878)	0.000473	(0.00139)		679	0.139	0.830***	(0.0818)	-0.000499	(0.00129)		679	0.132	0.806***	(0.0764)	0.00103	(0.00140)		679	0.141	
All Latin America	1.370***	(0.0500)	0.00153*	(0.000783)		724	0.510	0.951***	(0.0434)	0.000809	(0.000679)		724	0.399	1.199***	(0.0456)	0.00167**	(0.000829)		724	0.489	
Standard errors in parentheses																							
*** p<0.01, ** p<0.05, * p<0.1																							
Beta is the estimate coefficient on the monthly all equities index (weighted or unweighted, as noted) minus the consol rate divided by 12. The dependent variable is the similarly weighted sector/country index minus the consol rate divided by 12.																							

Table 7

Percent of total security-month equities by industry		
	UK-listed	Bolsa (1900-1929)
Banks	10.6	23.1
Building	0.0	7.4
Chemicals	2.6	3.7
Food	6.1	3.7
Gas, light, and water	10.8	7.4
Insurance	0.0	14.8
Land, mortgage, and financial (including real estate)	26.0	14.8
Manufacturing	0.0	14.8
Mines	0.8	0.0
Miscellaneous	4.9	0.0
Oil	0.0	7.4
Railways	25.1	0.0
Shipping/port	1.0	3.7
Tea, coffee, rubber	0.1	0.0
Telegraph	2.6	0.0
Trams	6.9	3.7
Trusts	2.5	0.0
Bolsa data provided by Leonard Nakamura and Carlos Zarazaga; UK data described in text.		

Table 8

		Monthly average and standard deviation			Annual equivalent					
		Bolsa	UK Latin America	UK Argentina	Bolsa	UK Latin America	UK Argentina			
1900-1909	average	0.0167	0.0075	0.0086	0.2205	0.0938	0.1081			
	SD	0.0726	0.0259	0.0212						
1910-1919	average	0.0057	0.0052	0.0027	0.0702	0.0648	0.0334			
	SD	0.0382	0.0215	0.0201						
1920-1929	average	0.0046	0.0023	0.0035	0.0568	0.0282	0.0430			
	SD	0.0241	0.0307	0.0273						
1900-1929	average	0.0090	0.0050	0.0050	0.1138	0.0619	0.0616			
	SD	0.0496	0.0264	0.0232						
Sources: Bolsa index calculated from data provided by data from Leonard Nakamura and Carlos Zarazaga; UK data, see text.										
Annual equivalent caluclated as $(1+\text{monthly return})^{12} - 1$										