# Finance Imperialism in British India

*Profits from Indian equity on the London Stock Exchange 1900-1930*

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# Abstract

The theory of finance imperialism, according to common interpretations of Hobson and Lenin, posits that investments in formal empires should yield higher returns than investments in the imperial metropolis and foreign countries. The aim of this study is to test this theory on British India in the era of modern imperialism, by comparing British Indian profits to estimates of returns in the U.K. and other parts of the world. A total returns index is constructed, based on data from *Global Financial Data* and the *Investor's Monthly Manual*. A guide for interpreting and using these resources is outlined. Findings indicate that a strict interpretation of finance imperialism does not explain British presence in India well, unless bias against industrial investments on behalf of British finance is taken into account.

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# Table of Contents

# I. Introduction

On a map of the modern world, there are few borders that have not been shaped by the struggle of empires. The expansion of European power, from the 15th to the 20th century, left almost no place untouched. In the 19th century, the growth of industry created new centres of power and tensions intensified. Two world wars were the culmination of a long struggle between European states, their offshoots and rivals. The social, economic and human consequences of this process, good and bad, have left a deep impact. To understand modern history and the world today, we must understand imperialism.

In the study of modern empires, two questions constantly appear: what were the forces behind imperialism and who, if anyone, benefited? In the general public today, the idea that colonialism and imperialism were profitable to the West is often taken for granted. A common "folk" theory, especially on the political left, assumes that colonies were vital in establishing the prosperity of Europe and kick-started the industrial revolution. Yet, in academia, the jury is still out. Especially concerning the imperialism of the late 19th and early 20th century, sometimes called the neo-imperialist era, finding evidence for net benefits of imperialism has been surprisingly difficult.

Studies of this issue have generally dealt with a particular theory of finance imperialism, based on the works of J. A. Hobson and V. I. Lenin. The 'Hobson-Lenin argument', as commonly interpreted, holds that the 19th and 20th century push for expansion was caused by oversaving of capital. This in turn prompted a need for new investment opportunities. Conquering and exploiting foreign territories were means to this end.

The external validity of this theory depends on whether or not the expansion of empire actually provided profitable investment opportunities, compared to what was available anyway. Little research has been done on the subject, but results so far have indicated that the empire was not very important to investors. This puts the concept of a rational economic empire into question.

The purpose of this thesis is to expand the study of profits further into the 20th century, to see if 19th century empire benefited investors in the long term. British India is taken as a case of imperialism, comparing the total returns to those in the U.K. and non-British countries in the same period. This is based on a comprehensive sample of Indian equity, using a database of securities on the London Stock Exchange supplemented with data taken directly from the contemporary financial press. Furthermore, the method of

calculating profits is aligned with modern best practices, weighted by market capitalisation and taking both dividends and capital gains into account.

## *I.1. Research Aims and Research Questions*

The aim of this study is to test if the theory of finance imperialism, as commonly interpreted, is a good explanation for continued British presence in India in the 19th and 20th centuries. In pursuit of this aim, investors' profits from equity in Indian companies traded on the London Stock Exchange are calculated in the form of a total returns index. Due to limits and errors in the underlying data (see chapters IV-V), the time period of the index is limited to 1900-1930. The research questions are:

- How did the rate of return from investments in India compare to investments in the U.K. and the world during the same period? In this sense, did empire pay?
- How do the results compare to previous estimates of the relative profits from investment in the U.K., the British Empire and the non-British world?
- To what extent is the theory of finance imperialism, as commonly interpreted, a good explanation for continued British presence in India in the 19th and 20th centuries?

## *I.2. Outline*

Chapter II examines the background and theoretical underpinnings of economic theories of imperialism, and of finance imperialism in particular. Then, the relevance of British India to a study of finance imperialism is discussed. Finally, the theory used in this study is defined, in the context of British India.

Chapter III looks at what previous research has to say about profits in the British Empire, and what this implies for the theory of finance imperialism. Gaps in current knowledge are identified.

Chapter IV contains a methodological discussion on the measure of profits in relation to finance imperialism. Particular difficulties are detailed concerning handling equity that is not fully paid.

Chapter V details the sources and methods used to construct a total returns index of Indian equity. Problems with the underlying data are reported. To ensure replicability and help future researchers, parts of this chapter can be used as a guide to reading the old British financial press.

Chapter VI presents a total returns index of Indian equity on the London Stock Exchange and sub-indices of particular economic sectors. The index is then compared to measures of profits in other countries and previous decades.

Chapter VII discusses the meaning of these results in relation to finance imperialism, and contrasts a few alternative theoretical interpretations. Suggestions for future research are presented.

Chapter VIII summarises the main conclusions of the preceding discussion.

# II. Background and Theory

Theories of imperialism explain the origin of empires or examine their consequences. The theory of finance imperialism is primarily concerned with the causes of imperial expansion, but it is quite inseparable from a particular question of effects: *Did empire pay?* In other words, did the economic benefits of empires outweigh the costs, and if so, for whom? Other than this, the consequences of empires must be left aside here. Not because they are unimportant but because it is a subject too massive and complex to touch upon lightly, and a thorough examination is beyond the scope of this study.

This chapter introduces the concepts of imperialism, economic imperialism and finance imperialism. It gives a background to the present day controversy of finance imperialism and the British presence in India. Finally, it combines these strands into a specification of the particular theory to be tested and its applicability to British India.

## *II.1. What is Imperialism?*

There is no uncontroversial definition of imperialism, because each theory of imperialism has a slightly different take on what the object of inquiry is. Convention has it that the expansionist behaviour of the great powers from the late 19th century and early 20th century can be described as imperialist. This is sometimes called the modern imperialist or neo-imperialist era, to separate it from European colonisation of the Americas in the 15th century and onwards or from the growth of empires in general (e.g. Deutsch 1974, 15).

What makes the neo-imperialist period unique? This is not easy to answer without taking an ideological stance. One could define neo-imperialism as the era of capitalist imperialism, which must be understood through the internal workings of states with a developed industrial capitalist economy. However, this definition would not be

acceptable among the great number of theorists who believe that imperialism and capitalism are wholly independent. One could attempt to avoid such controversy by describing the phenomenon in very general terms, like when J. R. Kurth called imperialism a matter of "... a great power's foreign policies toward other countries ..." (Kurth 1974, 4–5). Such an attempt would lose sight of the historical specifics, but it would also fail at avoiding controversy. In Lenin's famous treatise on imperialism, he spent half a chapter deriding his rival Kautsky for calling imperialism *policy* (Lenin 2005, chap. 7). There is no neutral ground.

Arguably, any scientific endeavour requires a clear operationalisation of terms. However, the larger part of the literature consulted in this study declines to do so, and perhaps for good reason. In following this convention, the rest of this thesis will use the term imperialism as if it refers to an imprecisely defined but objectively existing phenomenon. This should be satisfactory, because it would be foolish to claim that the British Empire did not exist, even if we might disagree on its meaning or nature. However, the precise meaning of the word must be allowed to change depending on which theory is being discussed. A meaningful understanding of the concept can only be developed in the context of the specific theories.

## *II.2. Economic Theories of Imperialism*

A major controversy in the study of imperialism is the question of whether or not the expansion of empires was economic in nature. There is a wide range of non-economic theories which explain the phenomenon on sociological or psychological grounds instead. For example, they can see this expansion as rooted in a universal will to dominate others when possible, or as a humanitarian project intended to spread civilisation (Davis and Huttenback 1986, 4).

Economic theories explain imperialism in terms of the economic interests of societies or classes, or as a consequence of particular economic systems. These theories may also contain non-economic components, and the two sets need not contradict each other. Still, a major current of academics have put the entire idea of economic imperialism under attack (Stokes 1969). To understand this controversy, we must first look at the historic roots of modern theories of economic imperialism.

Social and political scientist K. W. Deutsch divided the explanatory economic theories into three classical schools (Deutsch 1974, 15–21). Conservative theories, primarily endorsed by European statesmen of the 19th century, viewed imperialism as a necessity

to preserve the social and economic order of developed countries. In these theories, the survival of capitalism depends on securing new markets, maintaining employment and the export of capital. Furthermore, unrest due to unemployment at home could be channelled towards aggression against 'lesser breeds' abroad.

Liberal theories, such as that of J. A. Hobson, also viewed the contemporary imperialism as an issue of economic interests. However, in his theory these were primarily the interests of certain powerful classes within the imperialist nations. The rest of society was only burdened by the costs in lives and money caused by expansion and war. Imperialism did not serve capitalism as a whole, only special interest groups.

Marxist theories built upon both of these schools. Like the conservatives, they viewed imperialism as integral to capitalism, for much the same reasons. However, like the liberals, they condemned it. The internal contradictions of capitalism placed the developed nations in a state of decline, which had to be offset by expansion and domination of others. In V. I. Lenin's formulation of such a theory, this too was unsustainable, and the imperialist order would eventually undo itself, reversing the power relations between empire and colony.

In addition to the classical schools, Deutsch mentions the various dependency schools. While they offered little explanation for the initial causes of imperialism, they attempted to explain the structural reasons for its continuation. According to these theories, the existing global patterns of production and trade serve the developed countries, creating a growing disparity in power and wealth. Unlike Lenin, dependency theorists viewed imperialism as self-reinforcing and tended to believe that global inequality would continue to grow stronger if no conscious action was taken against it.

Political developments of the 20$^{th}$ century changed the ideological connotations of the various theoretical stances outlined by Deutsch. Anti-colonial movements were ideologically strengthened by theories that emphasised economic benefits to the imperialist metropoles through exploitation of the colonies. For the poor nations of the world, blaming imperialism for their relative underdevelopment, and using it to explain the wealth of the global North, is still an important part of arguments for reparations, aid and debt relief. With an international community numerically dominated by former colonies, conservative apologists for empire could hardly continue to argue for the economic benefits of subjugating others. Instead, a defence of empire required the reverse position, that imperialism was costly to the developed nations, while maintaining the old idea that colonies benefited from being 'civilised'. In this way, the

entire imperial project could be seen as a charitable gift to the underdeveloped countries[1].

In a similar vein, the Marxist connection between imperialism and capitalism posed a threat to the latter. This was especially true in a world were imperialism was largely condemned, following the two world wars. In light of this, proponents of capitalism gained a stronger interest in the aspects of the liberal position that separated capitalism from imperialism. However, it would be even safer to cut the cord between imperialism and economic explanations altogether. In this context, it is easy to see the political sensitivity of economic imperialism, and why challenges to the concept would be met with suspicion and hostility by some, and welcomed by others.

### The Challenge to Economic Imperialism

According to Stokes (1969), the modern criticism of economic imperialism began to take form in the 1940s. It was directed against what was commonly called the 'Hobson-Lenin hypothesis', which implied that the need to export capital gave imperialist states their impetus to expand. For example, statistical approaches to the question found no clear connection between the volume of capital exported and late 19$^{th}$ century colonial expansion. A refined form of the challenge began with the contributions of Gallagher and Robinson (1953), who popularised the concepts of formal and informal empire. While these authors accepted the idea that economic motives were a driving force behind imperialism, they argued that such motives could not explain the expansion of formal territorial control over colonies. Formal control was costly, and there were cheaper means to increase economic power. An informal empire of debt, trade and investment relations served economic needs just as well, and this mode of control was preferred by the British. Formal territorial claims were a last resort, used only when trade could not be secured by informal means.

As Stokes (1969) noted, the concept of informal empire was not a direct challenge to Hobson or Lenin. In fact, the idea that formal and informal imperialism were two sides of the same coin was central to Lenin's argument, if not expressed in those terms. But Gallagher and Robinson's formulation had two important implications.

1 As an example of modern arguments along these lines, Ferguson and Schularick argue that membership in the empire was beneficial to colonies, due to cheaper access to capital and that the answer to poverty may be the "... importation (or imposition) of less dysfunctional economic, legal, and political institutions." (Ferguson and Schularick 2006, 308).

First, it posed a challenge to the view that the expansion of formal empire had its direct cause in the internal politics or economy of developed capitalist countries. Instead, the transition from informal to formal empire had to be explained by looking at the political and social situation on the periphery. This put their theory seemingly at odds with the Marxist view, where capitalism was an engine for imperialist conquest.

Second, the idea of formal empire as a last resort stood in sharp contrast to a view where political control was used to greatly increase profits. For example, the latter view held that political power could be a means to force down prices of inputs or restrict capital investments in the colony to extract exploitative monopoly rents (Svedberg 1981, 1–10).

Others developed this line of argumentation further (e.g. Fieldhouse 1961; Davis and Huttenback 1986; O'Brien 1988). In their understanding of the 'Hobson-Lenin hypothesis' or 'finance imperialism', a surplus of capital in the domestic economy meant that profitable investment became harder over time, resulting in a tendency for the rate of profit to fall. This meant that investors had to find business opportunities abroad, to vent the economy of its surplus capital and maintain the rate of profit. The idea behind economic imperialism, in this sense, was to ensure higher rates of profit abroad by opening and exploiting new areas of investment.

However, such imperialism would only make sense if profits in the formal empire were actually higher than in independent foreign countries. Otherwise, the rate of profit could be restored simply by investing in the other developed countries or their colonies. If formal empire did not yield higher returns, and imposed higher costs on the imperial metropolis, it would be economically irrational. Formal empire would not even make sense as a last resort: as long as there were profitable investment opportunities in the US, Europe or Latin America, there would be no need to control Africa, formal or not.

This led to a research project which, focusing on the British Empire, set out to compare investment returns in the domestic U.K. economy, the dependent empire and the non-British world (e.g. Davis and Huttenback 1986). If the dependent empire did not yield the highest returns of these three, finance imperialism would be largely disproven. This has been considered a challenge to the broader concept of economic imperialism, as Hobson and Lenin were considered its essential representatives (see e.g. A. J. P. Taylor 1952).

A weaker form of finance imperialism was considered, where only a minority of investors made large profits from the formal empire, while the rest of society bore the

costs (e.g. Davis and Huttenback 1986, 78). In this case, average profits could be lower in the empire, but certain investors could still benefit. However, if imperial policy was driven by these special interests, one would have to establish a clear link between these business interests and political power. The critics of the 'Hobson-Lenin hypothesis' had trouble establishing such a link. The actual imperial policy of Britain was contradictory, and not apparently driven by any one particular self-interest (Davis and Huttenback 1986, 301–18). Capitalist impulses may have influenced imperialist expansion at times, but did not seem to be the driving force.

### A Critique of The Challenge

There are several problems with the challenge outlined above. According to Stokes (1969), it relies on a caricatured version of both Hobson and Lenin, where the importance of capital exports is overstated, especially concerning Lenin's thesis. The 'attack on economic imperialism' is only an attack on a particular interpretation of a certain aspect of imperialist theory, perhaps even a straw man. Calling this interpretation of economic imperialism the 'Hobson-Lenin hypothesis' or 'finance imperialism' is misleading, because the finance imperialisms of Hobson and Lenin suggest alternative mechanisms for expansion than a need to export capital. While a test of capital exports patterns is a test of an important part of their theories, it is not necessarily the critical component.

The idea of connecting a falling rate of profit to the need to export capital, and a potential link to imperialism, can be traced back to Marx's *Capital volume III* (Germain 1955) and further back, to J. S. Mill (Davis and Huttenback 1986, 30–31). However, Marx did not have a full theory of imperialism, and the various Marxist theories that came after him rarely put this aspect front and centre (Germain 1955).

Both Hobson and Lenin suggest underconsumption as a factor in imperial expansion (Hobson 1902, 79–91; Lenin 2005). The structure of the metropolitan economy generates a surplus of capital, but also a surplus of commodities which cannot easily be sold to an exploited working class. This leads to a need to export capital, but also to open new markets for the sale of commodities. Imperialist conquests are a way to connect new areas of the world to the capitalist economy in order to realise sales and thereby profits.

Furthermore, Lenin (2005) defines imperialism as monopoly capitalism. The actors are not states, but international finance, trusts and cartels, forerunners of the modern multi-

national corporations. Their primary means to profit is not productive investment, but power. The main purpose of imperialism is not to directly create opportunities for investment, but to crush rival business and maintain monopolistic profits in the developed economies. For example, gaining monopoly control over raw materials ensures that prices of inputs can be kept down. Access to cheap imported food means that the working class can accept lower wages. The alternative to monopolistic control is not free trade, but the monopolistic control by someone else.

The challenge to the 'Hobson-Lenin' thesis implicitly or explicitly assumes that finance imperialism must be rational – not only in the sense that actors behave according to reasonable expectations, but that those expectations must reflect real *ex post* profits (e.g. see Davis and Huttenback 1986, 75–76). Investments must be profitable in the long term, or they could not have motivated expansion.

This is not necessarily true, however, as expectations could drive expansion without being realised. In Lenin's work, wild speculation is important. Opening new areas to investment generates a stream of new financial assets, and financiers make profit on the speculation on these assets. The eventual actual profitability of investments is of less interest to them. Similarly, grabbing land in the hope of finding natural resources, perhaps some fuel that has not yet been invented, is a motive for indiscriminate expansion. Any land left alone is a potential foothold for rivals (Lenin 2005).

This implies that imperialist endeavours can be unprofitable, even cause losses, and yet be rational in another sense. An important dividing issue is the specification of the counterfactuals of not taking a territory. For Davis and Huttenback, the only loss would be the profits potentially generated in that specific territory, which could be recovered by investing somewhere else instead (Davis and Huttenback 1986, 77–78). For Lenin the potential loss is monopoly power, which would hurt profits in existing industries.

It should also be noted that there are mechanisms of economic and financial imperialism suggested by other theorists than Hobson and Lenin. For example, R. Luxemburg proposed that capital exports to colonies was a means to generate demand for capital goods produced in the metropolis (Lee 1971, 862).

These examples show that neither economic imperialism in a broader sense, nor the finance imperialism of Hobson and Lenin specifically, hinge on returns from capital exports. Nevertheless, the idea of a purely capital exports-oriented finance imperialism remains prevalent in the minds of academics and the public. Adding to this that the

empirical evidence for or against narrowly defined finance imperialism is still lacking, there is good reason to continue the research. Furthermore, while capital exports and returns on investment may not be the definitive tests of economic imperialism, they still play a significant part in the question *Did empire pay?*. This has relevance beyond explanatory theories. Determining the benefits, or lack of benefits, from empire is significant in its own right.

### Gentlemanly Capitalism: The Economic Empire Strikes Back

The work of Cain and Hopkins (2001) provided a new economic theory of British imperialism. It identified a class of 'gentlemanly capitalists' as the principal agents of imperial policy. They were neither entrepreneurial industrial capitalists nor purely aristocratic, but represented a set of financial and service interests (e.g. shipping) centreed in the City of London. While previous researchers had found British imperial policy contradictory and hard to identify with any particular self-interest, Cain and Hopkins showed that it was possible to explain most of it from the perspective of this class. Manufacturing interests sometimes got their way, and sometimes not, depending on whether or not their interests aligned with those of finance and services at the time.

In a way, this view could be considered an updated version of Hobson's theory of 'parasitic' financiers, which he believed were pulling the strings of European politics (Hobson 1902, 51–78). However, Cain and Hopkins held that the financial and service sectors were vital parts of the British economy. Far more than the industrial revolution, it was the 'gentlemanly capitalists' who had made Britain into the world centre of investment and commerce. Instead of being a conspiracy of parasites, the well-being of finance was deeply interconnected with British trade and represented the economic well-being of Britain, and thus in a way the national interest. In particular, maintaining the global dominance of sterling, and settling multi-lateral trade surpluses and deficits was an important part of the financial use of empire (Cain and Hopkins 2001).

If the connection of imperialist policy to capitalist interests has been resurrected, this increases the relevance of determining the motives for imperialism on the part of this financial class. To what extent was their interest in empire driven by a will to create profitable investment opportunities, or in other words driven by finance imperialism in its capital exports interpretation?

## *II.3. British India as a Case of Imperialism*

A large body of literature on imperialism has concerned itself with the British Empire. This is not strange, given that it was the dominant imperial power in the 19th century[2]. Yet the British Empire was not typical of the neo-imperialist era. An interpretation of Lenin's theory places the age of imperialism in the period after 1880 (Stokes 1969), while the British Empire had a continuity from earlier centuries. Furthermore, his theory focused on the role of monopoly and cartels, prevalent in continental Europe and the US, while the U.K. had a strong commitment to free trade. This makes Britain fit uncomfortably in this model of imperialism (Cain and Hopkins 2001, 31).

Still, a theory of 19th and 20th century empire that cannot explain the British Empire would be very weak. The exceptional structure and history of Britain does not mean that we can ignore it in a general history of imperialism. In the same way, a history of British imperialism cannot ignore India, just because it does not fit into any typical pattern of colonialism (Cain and Hopkins 2001, 275). India was the archetypal symbol of the Empire, and the experiences gained there had a strong influence on British thought (Barber 1975).

Furthermore, if British presence in Africa was largely motivated by an interest in controlling the routes to the East (Gallagher and Robinson 1953, 3), it is evident that understanding India is vital to understand the Empire. In Gallagher and Robinson (1953, 15), the "deepest meaning" of British expansion in the late 19th century was to be found in the development and exploitation of existing parts of the empire, pointing out India as a successful example.

### Explaining British Presence in India

The history of British India begins with the East India Company in the early 17th century. Initially facing fierce competition from the already established Dutch and Portuguese, the English soon gained military supremacy. Small territorial claims on the Indian coast served as trading posts in a wider network of trade on the Indian Ocean. In the 18th century, Indian opium became vital in settling the trade deficit with China. In time, the territorial claims expanded and British India grew from a set of trading posts to an empire spanning most of the sub-continent, still controlled by the East India Company. In the mid 19th century, this arrangement became unmanageable and the British Crown took formal control (Bayly 1988). Over a million square miles of land

2 Not to mention the dominance of British culture and language today, which no doubt has an impact on researchers' areas of interest.

was directly controlled by Britain, with another 700 000 in the hands of the nominally independent Princely States (Davis and Huttenback 1986, 27).

What prompted this immense territorial expansion? The Indian case is usually taken as a typical example of the turbulent frontier hypothesis (Galbraith 1960). As the Mughal rule of India fell apart, anarchy threatened the borders of British trading posts. To ensure safety and order, the East India Company had to secure the borders by expanding their territory. This created a new turbulent frontier and expansion had to continue until they reached sea, mountains or the border of another stable state. This line of thinking goes well with the theory of formal empire as a last resort. However, as Cain and Hopkins (2001, 279) point out: expansion at the periphery cannot explain why there is a presence in the first place. What made India worth the effort?

Barber (1975) shows how the 'official' explanation for British presence in India changed over time. Representatives of the East India Company seemed to change their arguments depending on the economic issues that were in vogue at home. He concluded that practical realities seemed to shape economic thought just as much as economic thought changed real policy. The interests of gentlemen in the Company significantly impacted on the economic discourse of Britain. This demonstrates how explicit or official reasons for imperialism cannot be taken at face value, and underwrites the importance of exploring underlying economic (or other) interests that can influence policy.

The turnover of power to the crown was brought on by the Indian Mutiny of 1857. According to Cain and Hopkins (2001, 284–86), the new gentlemanly order strengthened its influence and made India one of their important outposts. From this point, it becomes even more urgent to ask what purpose India served for these elites, and also for Britain.

There appears to have been several mechanisms at play. India was an important market for both imports and exports. It also played a part in a system of complex multilateral settlements, where Britain's trade deficit with most of the world was balanced out with a trade surplus towards India. Shipping fees from Indian trade were likely a great incentive for the Indian connection as well. The Indian government debt also represented important income streams for British finance (Cain and Hopkins 2001, 275–302). However, a critic of economic imperialism could argue that any of these functions would be possible to maintain without incorporating India into the formal empire. Or, if

it could not be done with India, by trade and investment in some other part of the world[3].

On the other hand, one aspect of the British-Indian relation was clearly not possible without control of the Indian government. The 'home charges', large transfers of money from India to Britain, connected to administrative and military expenses, represented a significant international money flow and were a constant drain on the Indian budget. This constant shortage of money had put constant pressure towards expanding the revenue from Indian agriculture, and sometimes prompted conquest of land, at least during Company rule. In this earlier era, India was perhaps more an outpost of feudalism than capitalism[4]. However, after the end of the Company, strategies to fund the home charges were directed towards developing mining, manufacturing and public utilities instead (Cain and Hopkins 2001, 275–302).

Capital exports from Britain were obviously vital to this development project. It is possible that the constant lack of money in the periphery acted as a pull on capital from the metropolis, instead of a capital surplus in the metropolis pushing for expansion. The Indian railway stocks on the London Stock Exchange were guaranteed by the government to yield at least 4 to 5 percent dividends[5] to attract investors, which would support this perspective. These guarantees must have been financed to a great extent by the Indian land revenue, which was the major source of income for the Indian government (Roy 2006, 317–18), so even the railroads could be considered an extension of an old feudal imperialism rather than a modern capitalistic one.

However, a pull on capital initiated by the frontier does not exclude the possibility of a push from Britain. If Cain and Hopkins are right in that finance and service interests were increasingly dominant in directing imperial policy, it is of interest to determine the degree by which these interests were driven by a need to find profitable investment abroad. Testing the capital exports interpretation of finance imperialism on India is to do precisely this.

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3 O’Brien (1988) discards the relevance of the multi-lateral settlement and commodity trade arguments for this reason. This is expanded upon in chapter VII.

4 Lenin's theory of imperialism made room for a pre-capitalist 'military and feudal imperialism' before the era of high imperialism which he was concerned with (Stokes 1969, 298).

5 Roy (2006, 288–99) claims that the guarantee was 5%, but the sample of railway stock in this study revealed lower guarantees, even for some non-preference shares.

### *II.4. Testing a Theory of Finance Imperialism on British India*

To summarise, the narrowly defined theory of finance imperialism relies on some flawed assumptions but remains an interesting area of inquiry due to its persistence in the literature, a lack of empirical research and a renewed interest in the relation between the financier class and imperialist policy. This theory, as used by Davis and Huttenback (1986) and others, i.e. the 'common interpretation' referred to in the research aims, forms the basis of this thesis. Following Davis and Huttenback's analytical concepts, British investment is divided into three categories depending on its destination: domestic (the U.K.), empire (within the formal empire) and foreign (the non-British world, including informal empire).

The formal empire of Britain can be further subdivided into the dependent empire and the states with 'responsible government', effectively the white settlements. The latter had a large and growing degree of political independence, which makes them a poor test of whether direct political control by the imperial metropolis meant higher returns[6].

In this study, India is the representative of the dependent empire. To test the prevalence of 'financial imperialism', profits from British investment in India need to be compared to profits from the domestic U.K. and the average and/or most profitable parts of the foreign sector. The theory holds that investors seeking high profits pushed for imperialism, and that their expectations were rational. *Ex post* profits are used as an estimate of long-term rational expectations, for two reasons. Experience from previous investments in the empire affects future expectations and, assuming that investors are well-informed, there should be some correspondence between expectation and reality. Under these assumptions, marginal profits should be higher in India than in the domestic and foreign sector, or investors could just as well invest elsewhere. Marginal profits are hard to determine, so average profits are taken as an indirect measure (see Davis and Huttenback 1986, 77–78).

We are only interested in the period from about 1860 and beyond. Expansion under the East India Company must be explained by different principles, and the theories of imperialism under discussion concern a period starting in the second half of the 19th century, when the U.K. starts to become a significant exporter of capital (see Edelstein 1982, 17, Fig. 2.1). This is also the time when Indian stock starts to appear in the financial press of London. For this particular study, only data from 1900 to 1930 is used

6 In any case, the political and economic role of these dominions was different enough to warrant separate theoretical treatment, which is beyond the scope of this study.

(see section IV.1 and V.4). Still, this can help explain imperialism in the late 19th century as well. Profits realised in the 20th century could be used as an estimate of the rational expectations of profits from investments in the earlier century.

Measuring profits beyond Indian independence would also be of interest. This could show long-term benefits of formal empire extending beyond the end of formal rule. It could also be a test of the profitability of direct political control, seeing if profits change after independence (Svedberg 1981). However, as India gained its independence in 1947, this is a task for future researchers.

# III. Previous Research

Contemporary discussion on the comparative profits of domestic British investments and investments in the empire is mostly based on two sources, Edelstein (1982) and Davis and Huttenback (1986).

Edelstein is primarily concerned with comparing domestic and overseas profits between 1870 and 1913, making no demarcation of empire, formal or otherwise. He uses price, dividend and interest data on stocks and debentures, primarily gathered from the *Investor's Monthly Manual,* to produce an unweighted index of returns from both dividends and capital gains (Edelstein 1982, 116–20). His main finding is that overseas returns exceed domestic U.K. returns in the period (Edelstein 1982, 130). The overseas advantage increases from 1870 to around 1900, when they begin to converge (Edelstein 1982, 145, Fig. 6.2). He also finds that overseas investment had slightly lower risk than domestic stock and therefore that risk-adjusted profits were still higher overseas. Suggested explanations for this difference are that overseas regions have a higher degree of new possibilities and innovation, or greater opportunity for monopoly rents. He also entertains the possibility that a less crude risk-adjustment would yield different results (Edelstein 1982, 137–38).

Davis and Huttenback build upon Edelstein's work, attempting to determine the extent to which formal political control allowed British investors to gain monopoly profits. First, they attempt to divide Edelstein's results into domestic, empire and foreign sectors. This shows that, while the empire was more profitable than the domestic sector, foreign investments were the most profitable (Davis and Huttenback 1986, 80–81). This finding indicates that exploitative political monopoly is not the explanation for higher overseas returns. On the contrary, political control of overseas countries was associated with lower returns, even before accounting for the costs of the empire. Exploring this

further, they construct three other measures of profit, using a sample of British-controlled companies, again divided into domestic, empire and foreign. Each measure is based on the internal accounting of the firms, using three definitions of profit: return on all capital claims, return on adjusted book value of equity and return on price-adjusted physical assets (Davis and Huttenback 1986, 106). None of these correspond directly to the measure of shareholders' profit used by Edelstein.

The different methods produce different results, both in absolute levels and relative performance of the sectors. However, there are some general trends. The empire was the most profitable sector before 1880, but quickly fell to last place thereafter. These initially high returns may be due to a small sample size biased towards pioneer firms in newly opened regions (Davis and Huttenback 1986, 106–7).

After that, each sector shows a general tendency of slowly declining profits. The domestic sector held a steady first place in profits from around 1880 to 1905. In the 1900s, empire and domestic returns converge. In the same period, empire begins to catch up with foreign returns in two of the measures. Real returns on assets in the empire become higher than in foreign firms after 1908. However, in each measure, foreign returns increase sharply in the four years leading up to 1910, overtaking the other sectors in returns on all capital claims and adjusted equity. Their conclusion is that the formal empire was probably a “snare and a delusion” for investors after 1880 (Davis and Huttenback 1986, 106–10). Also, pointing out that the dependent empire absorbed less than 10% of British investment, it was unlikely to have greatly increased domestic profit rates, unless the empire rates were very high (Davis and Huttenback 1986, 308). Since they weren't, the empire likely didn't contribute to maintaining high profit rates at home.

These two works have been highly influential, but the conclusions about an unprofitable empire are exclusively based on a study of 1865-1914. In Davis and Huttenback (1986, 81–82), the sample of firms for each region and sector is quite small, as 438 firms are taken to represent the whole world. Furthermore, firms are not sampled based on size (ibid.), which means that a few small and insignificant firms may have been taken as representative for large parts of the dependent empire. Using an unweighted index adds to this problem. In any case, the conclusion is only clearly supported for the twenty years between 1880 and 1900. What happened to returns after this?

Svedberg (1981) takes an interest in what he calls the modern colonial epoch, 'peaking' in 1938 and ending in 1967. His study aims at testing the presence of monopoly profits

from investments in the British Empire, excluding the self-governing dominions of Canada, Australia, New Zealand and South Africa. Since several colonies gained independence in this period, he defines the region under study as Sterling LDCs (Less Developed Countries). Unlike Davis and Huttenback, Svedberg argues that monopolistic advantages through political control are best found by comparing the colonies with non-British countries of similar economic development, i.e. other LDCs.

Noting that discriminatory practices in favour of national business increased gradually after the First World War, monopolistic advantages should increase in this period (Svedberg 1981, 7). The results support this hypothesis, showing "... much higher returns in the colonies than in non-British countries during the colonial era proper ..." and that "... the difference disappeared after the majority of the colonies had gained political independence" (Svedberg 1981, 28). Furthermore, British metropolitan investment was highly overrepresented among investors in the colonies, indicating that political practices favouring British investment were the mechanism behind these differences.

The profit measures have some significant methodological problems concerning the value of capital assets, but Svedberg asserts that any systematic bias this introduces would likely underestimate the difference between the sterling and non-sterling areas (Svedberg 1981, 19–21). Thus, the study seems to have shown that there were significant advantages to formal empire, at least after 1938. However, he only shows this advantage in comparison to investing in other countries of low development. If investors could gain higher profits from investments in the US or Europe, profits from investments alone cannot explain imperialism. Svedberg's conclusions do not contradict the earlier studies, except concerning Latin America, where Svedberg shows lower returns than in the sterling area (Svedberg 1981, 29). In Edelstein's calculations, Latin American yields were among the highest (Edelstein 1982, 123–25, Tables 5.3 & 5.4), seemingly giving a strong advantage to informal empire over formal. Here, the relation is inverted.

How did returns from the empire compare to investments in the rest of the world after 1913, including developed countries? This author has found no study that answers that question directly. However, there are comparisons of investment in the U.K. with the rest of the world in general.

Dimson, Marsh, and Staunton (2002) compile total returns indices for equity in the U.K. and fifteen other countries between the years 1900 and 2000. However, the only British

dominion included is South Africa. The other indices are for the US, Canada, Japan and a host of western European countries. Svedberg's rates of return are not comparable, because they do not include capital gains and include returns on loan capital as well.

Grossman (2015) provides an alternative total returns index for the U.K., spanning 1869 to 1929, and compares returns to those on other continents. There is no separation between empire and non-empire, but comparing the regions gives us some hints. Grossman notes that dividend yields were similar across all regions, and that differences showed themselves primarily through capital gains (Grossman 2015, 489). African capital gains surge after 1892, remaining at the top of the weighted index thereafter. Asian shares had the second best performance, with the majority of gains happening after 1914. Latin America comes in third place and the more developed regions thereafter, with the U.K. and Europe at the bottom (Grossman 2015, 481–84). Interesting to note is that this general ranking holds true for the un-weighted indices as well, even if all yields are significantly lower there. This suggests that differences compared to Davis and Huttenback cannot easily be explained by their index being un-weighted. Different samples and a later period are more likely explanations.

If Grossman is right in that less developed regions had higher returns than the developed, and Svedberg is right in that formal empire is more profitable within the subset of less developed countries, then formal empire would be more profitable than informal, at least in the 20th century. Perhaps the much discussed 1870-1890 period of low returns was a historical exception.

### *III.1. Investment in British India*

Before the First World War, India had the largest amount of foreign investment in the Third World. However, the investment per capita was still low. Furthermore, foreign direct investment was a small part of India's capital. The modern sector was a small part of the economy, and foreign investors had other means of control than direct investment in joint stock companies. One of the dominant modes of business in India was agency houses, which could exercise control over the economy without formal ownership, making trade deals with independent cultivators. There were also a significant amount of locally registered “rupee companies” controlled by non-Indians. These types of investment and control were unlikely to show up in data on overseas investment. For this reason, foreign investment in official numbers was easily underestimated. These peculiarities in the Indian case meant that a large part of the modern economy could be

controlled by the British even though foreign control would seem relatively small by standard measures (Twomey 2000, 117–20).

For the same reasons, a study of profits from joint stock companies in India would capture only part of British business. A large part of investment in the empire did not pass through the London Stock Exchange, although this share increased over time after 1860. It is difficult to say if profits from shares on the exchange are representative of overall profits in India, but there is no obvious *a priori* reason for why they would not be (O'Brien 1988, 171–72).

From the perspective of British capital exports, India played a significant but subordinate role. Estimates of capital called up in London to India between 1865 and 1914 add up to 239 million pounds. This was 20% of capital called up from within the empire, but only 5% of all London capital called up in the U.K., the empire and the rest of the world. Just over half of this capital went to the Indian government, the rest to private firms (Davis and Huttenback 1986, 40–41).

Cain and Hopkins (2001, 299–300) hold that the role of India within the imperial system grew between 1858 and 1914, as financial and service interests increasingly spread their influence abroad. Political control was used to safeguard remittances, and when this was visibly accomplished, it encouraged new investment into the region. However, it is still unclear whether or not this investment was more profitable than investment into other regions, especially after 1914, as evidenced by the review of research above. In other words, it is not clear whether or not investment in India was driven by the push of finance imperialism, or by some other mechanism.

### *III.2. Summary*

Previous research on the profitability of the British Empire relative to domestic and foreign investment has produced inconclusive results. The seminal study by Davis and Huttenback (1986) indicated low relative profits, but this is seemingly contradicted by other studies. The reasons behind these differences are not entirely clear. Furthermore, the various studies have significant gaps in terms of geography and periodicity. Constructing a more comprehensive profit measure for India can be a step in the direction of filling these gaps.

# IV. Measuring Profits

Before specifying the methods and sources used in this study, the methodological issue of how to measure profits must be discussed. The choice of sources is informed by the choice of profit measure, which must be put in context before introducing the data in more detail in the next chapter.

There are many valid ways to calculate profits, each with its own theoretical underpinnings. Ultimately, the choice of method depends on what questions you seek to answer, and whose perspective you take. For the purposes of this study, the focus is on the investors' perspective, because it is supposedly their hunt for profits which drives finance imperialism. Furthermore, it is the relative rates of return that are interesting, as an indirect measure of marginal rates of return, and thus the allure of formal empire. This means looking at how much money investors earned per pound invested on the stock exchange.

Taking this perspective has its limitations, and there are many things that these returns cannot tell us. For example, it is not a measure of productivity, nor of monopoly or exploitation of India. High profits may come from any or all of these sources, but this is arguably irrelevant to the investor, and therefore to the questions posed in this study. For the question of the political economy of imperialism, it is primarily the size of financial returns that matters (Davis and Huttenback 1986, 33–34).

Determining the full benefit to the investor requires looking at both dividends and changes in price. Furthermore, the component equities in an index must be arithmetically weighted according to their market value. Total profits should be reinvested in the index, giving dividends the same function as profits retained in the company. Furthermore, the selection of securities must be representative of the stock market at the start of each period. Otherwise, it will be biased towards shares that 'survived'. In following all of these principles, the index will represent an investment strategy that was possible at the time, and its value will represent the actual profits made by an investor following this strategy (Dimson, Marsh, and Staunton 2002, 34–36). To make the index values meaningful, they are converted to real terms using an index of price inflation.

This gives a financial total returns index. There are many potential issues with taking such an approach to compare imperial states with their subjects, as outlined by Davis and Huttenback (1986, 79–80). First of all, in a functioning equity market, securities of

equal risk should theoretically equalise their financial rate of return over time. As demand is higher for securities with more dividends, their prices rise until dividend per price is equal to that of other shares.

By including capital gains in the index used, this problem could be avoided, because any increase in price that would equalise dividend returns would simultaneously increase total returns. For this to work, though, it is important that the initial price in the index is the emission price, so that the whole history of price changes is captured. Otherwise, an initial 'equalisation' might be lost, and total returns underestimated.

The extent of this problem in relation to the data at hand can be estimated by comparing the first price observation of each security used in this study with the nominal (or, when applicable, 'paid') value of that security. A sample of 30 equities, weighted by market capitalisation, show an initial price-to-nominal ratio of 3.18 in the first observation. However, for many shares this includes gains from before 1900, which would be captured by indices of earlier decades. Excluding a significant outlier where this is the case, the ratio is reduced to 1.25 instead. This may be a problem, and future researchers should perhaps add an initial price observation equal to the emission price before the first documented market price. However, this would be an unconventional measure and decrease comparability with other total returns indices that have not performed this correction. Furthermore, it would require knowing the emission date to avoid including capital gains from earlier periods. Such a data collection effort, with potentially little to no impact, is beyond the means of this project.

Another potential problem is that the measure of profits applied here does not take manager remuneration into account. Majority stock-holders may have earned benefits beyond dividends and capital gains if they took management positions, which could have motivated investment. If direct British ownership was easier to secure in the dependent empire than in foreign countries, manager remuneration could have been higher in India than elsewhere. However, Davis and Huttenback (1986, 82–83) found no apparent difference between locations of investment when using alternative measures of profits. This indicates that management remuneration was as high outside the empire. The difference between direct and portfolio investment can be important in other ways, but seems irrelevant for this study.

A further issue is that using total returns introduces the problem of fictitious capital. Share prices do not only reflect profits made from the activity of the enterprise, but also speculation on future changes in share prices themselves. From the perspective of

investors, 'fictitious capital' has very real value while it lasts, but it makes returns highly volatile. Over a long enough time span, the booms and busts should cancel each other out, and the underlying 'real' profits can be compared. The 31-year perspective used in this study may not be enough to avoid this problem, and the end-year of 1930 is especially problematic; 1931 had the largest negative returns in the world stock market of the 20th century (Dimson, Marsh, and Staunton 2002, 314). If profits were higher in one equity market than in another during the period studied here, the roles may have been reversed in the crash. Results for the period 1900-1928 and year-by-year data for the entire period will also be presented and discussed for this reason.

### *IV.1. Handling Nominal Values vs. Paid Amount*

In the 19th century, the institutions surrounding joint stock companies were young, controversial and quickly evolving. A peculiarity of British shares from this period and the early 20th century is that many were partly paid[7]. When initially sold, investors paid one amount (the *paid* value) but had an obligation to pay more if the company called for it, up to the nominal (or *par*) value. This obligation was transferred with the ownership of shares. If extra capital was called for, the registered paid value increased, and the shareholders' obligations decreased. But as long as the paid value was lower than the nominal value, shareholders were effectively in debt to the company. As the nominal value was sometimes very high, investors could be considered to have *de facto* unlimited liability (J. Taylor 2006).

The widespread prevalence of partly paid shares produces a number of theoretical and practical problems. First of all, this practice makes these shares qualitatively different from modern common equity. It is not given that they can be expected to function according to current theories of equity markets, or that direct comparisons to modern equity shares are meaningful. If ownership of a share comes with an obligation of future payment, but at an unknown time, how does this affect perceived risks and pricing for the investor?

Even if this problem is overlooked, the impact of changing amounts of paid capital on the price of shares cannot be ignored. As the amount paid increases, the amount of capital in the company increases and investors' obligations for future payments decrease. Furthermore, dividend payments are often percentage values on the amount paid, so expected dividends increase. A glance at the relation between price and amount

7 Grossman (2015, 488) shows that a large amount of equity was still partly paid well into the 20th century. However, this was rare after 1900 in the sample used in this study.

paid in the contemporary London financial press (*Course of the Exchange* and *Investor's Monthly Manual,* see below) indicates that a change in amount paid tends to cause an equal absolute change in price. Given that amount paid can increase tenfold or more, causing a corresponding change in price, constructing a total returns index without correcting for changing amounts paid would overstate returns immensely. The investors would seem to have increased the value of their investment ten times, while their net wealth has actually not changed at all.

Previous researchers have handled this issue in different ways. Edelstein excludes all "discounted shares", either entirely or from years where they would affect yields (Edelstein 1982, 116). This may introduce bias unless the composition of partly paid shares is very similar to the set of fully paid. Dimson, Marsh, and Staunton (2002, 299–300) corrected their data for "capital changes", which likely includes changing paid values.

Unfortunately, the main source used for share prices (Global Financial Data, see below) does not contain useful information on paid values. Some shares have the amount paid in the name, but there is no regular data on changes in amount paid over time, which is all that matters for an index of this type. To fully correct for amount paid, one would need to know the amount at every price observation. At each such observation, one would have to subtract the change in paid from the change in price since the last observation. Given that investors seem to have treated amount paid as having a direct impact on the value of shares, this would correct the issue.

*Course of The Exchange* and *Investor's Monthly Manual* contain the necessary data, on a daily or monthly basis. However, due to time constraints at the archive, data on amount paid could not be systematically collected for all securities in this study. Instead, only shares that were fully paid or were observed to have unchanging paid values at all observations were included. Unfortunately, this meant that all data from the 19th century had to be excluded, because unchanging paid values could not be confirmed. This, in turn, excluded all extra data collected from the *Course of The Exchange* and *The Stock Exchange Yearbook* from the index. For the period of 1900 and beyond, only the first three years of a single security had to be excluded.

# V. Method

This chapter presents the sources and methods applied in the construction of a total returns index for Indian equity, along with potential sources of error and bias.

## *V.1. Index Formula*

The measure of profits used in this study is a total returns index, which includes both dividends and changes in equity prices. It also takes reinvestment into account, based on an investment strategy where the hypothetical investor reinvests their earnings every month. Dividends and capital gains are calculated monthly and weighted by the market capitalisation of each security in the previous month. These principles of index construction are the ones recommended and used in Dimson, Marsh, and Staunton (2002, 34–44).

The formula for the rate of return $r$ of a particular stock $i$ in month $m$ is:

$$r_{i\,m} = \frac{\left(p_{i\,m} + d_{i\,m}\right)}{\left(p_{i\,m-1}\right)}$$

where $p$ is the last observed price adjusted for splits and $d$ is dividends in that month. The weighted monthly profit index $R$ is calculated as follows:

$$R_m = \sum_{i=1}^{s_m} \left(1 + r_{i\,m}\right) \times k_{i\,m}$$

where $s_m$ is all equities which exist in that month and $k$ is the share of total market capitalisation last month, but only including shares that exist in month $m$ (ensuring that the sum of weights is 1). The yearly index value is the product of all monthly index values in that year.

Sub-indices for the various economic sectors use the same formula, with weights based on relative market capitalisation within that sector. All indices are adjusted for inflation, using a U.K. price index retrieved from O'Donoghue, Goulding, and Allen (2004). Average returns for the entire period, or sub-periods, are calculated using a geometric average of yearly returns.

## *V.2. Main Source and Sample*

The main source of equity data is the Global Financial Data (GFD) database of shares from the London Stock Exchange, which (in theory) contains data on prices, amount of shares, dividends and splits for all listed shares since 1693 that have appeared in any of a range of contemporary financial publications. The main advantage of this data is that it includes a large number of price observations for a large number of securities, at least from the mid 19th century and onwards. Data on a similar scale would have been impossible to collect manually within the framework of this study.

The sample of equities includes all items in the database categorised under 'India' and 'equities'. This includes not only common stock, but also preference shares, a small number of convertible debentures and other varieties. This is because it was hard to reliably make a more detailed division. The sub-categorisation of Indian stock in the GFD database appears dubious, since the assigned categories are sometimes contradicted by the names of the series or information in the primary sources. This means that the index is composed of shares that are, on average, less risky than ordinary stock. The dominance of railway shares with government guarantees reduces risk further.

The inclusion of all 'India' stock causes some problems. The division of British companies in India into the 'United Kingdom' or 'India' categories in the database seems quite arbitrary, sometimes including different share series of the same company in different categories. Nevertheless, no practical way to reliably recategorise U.K. companies operating in India as Indian was found. Even when obvious cases of Indian companies categorised as U.K. companies were found by chance, they were excluded, in order to retain a systematic foundation for the sample. This has likely biased the sample against companies where national boundaries were not clear. For example, shipping companies are almost completely absent.

Including all 'India' stock available produces a sample that is not random, but that should still be representative of Indian shares on the London Stock Exchange, apart from the problems already stated. One other possible issue is that the selection might be biased against small and less successful companies that were not reported on much in the financial press. These may be less prevalent in the GFD database, and the exclusion of companies where problematic data could not be verified might increase this problem. However, small companies would not have a significant impact on an index weighted

by market capitalisation anyway and availability of data in the financial press might be an indication of importance and size.

Finally, the sample includes shares of companies operating in the Princely States, as made apparent by share names referencing Travancore, Mysore and so on. On the other hand, many companies categorised as operating in modern day Pakistan or Bangladesh were excluded by only using the India category, even if they were part of British India in the time period under study. The latter issue could have been avoided by including shares from those countries, but this was not done, as a convenient way to limit the scope of the study to a manageable sample size.

## *V.3. Errors and Missing Data in the Database*

Apart from the issues with categorisation outlined above, several issues with the GFD data were found during the process of data-checking. To construct a capital weighted total returns index, one needs (at a minimum) data on prices, dividends, number of shares and splits. For all of these types of data, there were significant issues in the GFD database. Below is an outline of these issues and how they were handled.

### Obviously Missing Dividends

For a large number of shares in the database the data on dividends only specified dates, but no money amount. The reasons for this are unknown, but an educated guess (based on a study of the primary sources) is that many equities had dividend specifications which were hard to interpret, because of archaic methods of presenting them in the primary sources. To correct this, the primary sources of the database were used to fill in the gaps. This is explained further in section *V.5*. Practically all of these gaps were filled, so this issue should have no effect on the results.

### Less Obviously Missing Dividends

For other equities, there was no dividend data at all. An initial sampling of such equities showed that this did not necessarily indicate that there were no dividends. More often than not, the primary sources revealed dividend data.

There were also equities with sparse or abruptly halting dividends, but relatively stable prices, which caused suspicion. In this case, the primary sources often revealed dividends that had not been included in the database.

This prompted a full check of dividends on all included equities in the primary sources, revealing further missing dividends in the database. As supplemental dividend data has been collected, this issue should be completely resolved. However, this serves as a warning to future users of the database. The extent of missing data is hard to determine using the GFD database alone.

### Missing or Erroneous Number of Shares

For some equities, the number of shares were missing for some or all years. Again, this information was available in the primary sources[8].

A more devious issue was that, for many equities, the number of shares recorded by GFD was off by up to a factor of 100. Without correcting for this, the companies with these errors would have completely dominated the index. The errors were due to an oversight, where number of shares was mixed up with nominal capital issued, since the same column in the Investor's Monthly Manual could interchangeably use one or the other.

### Missing Splits or Wrong Split Dates

Perhaps the most problematic potential source of errors in the GFD data was missing splits. If price changes are taken at face value, without correcting for these splits, returns may be severely over- or understated. In other cases, the split date was recorded by GFD without a split ratio and/or the date was set to the 15$^{th}$ of the month regardless of the actual date.

Correcting for this required some educated guesswork, since collecting corrected split data from the primary sources was not possible within the framework of this study[9]. However, splits can be imputed using apparent changes in number of shares and nominal value of shares combined with sudden changes in price.

Completely missing splits being an '*unknown unknown*' in this case, it is hard to be sure that the problems have been completely fixed. But using the hints described above, it is unlikely that any significant reverse splits occurred outside of the ones noted, as these would have caused an obvious and suspicious spike in returns. However, a forward split combined with new emissions, causing nominal capital per share and number of shares

8 Edelstein (1982, 120–21) points to errors in the financial press data for market capitalisation and number of shares. He avoids using this data to make a weighted index, arguing it would be too risky due to his small sample. The sample is larger here, and the impact of a single error smaller.

9 Such information should be available in the Stock Exchange Yearbook.

to change at different ratios, would be hard to detect or correct for using the data available in this project. Missing or infrequent data on number of shares can also make splits hard to spot. Using too much guesswork would risk 'correcting' a price change that was an actual sudden change in price not caused by an underlying split. Some equities, where a split of some sort had obviously occurred but its ratio could not be decided had to be excluded from the index. Any remaining problems of this kind could produce a downward bias in the index.

### Summary of Errors in GFD and Excluded Data

Table 1 gives an overview of missing data in the GFD material, and the number of series excluded because of missing or problematic data. Categories A and B include only errors that could be corrected using the *Investor's Monthly Manual*[10]. A large part of category A consists of shares where only dates for dividends were available, and no amounts. There were also many shares where GFD had no dividend data at all, yet existing dividends could be confirmed. The most common error in category B was that the number of shares had been confused with nominal amount of capital.

Shares excluded from the index had an estimated market capitalisation of 1-11% of all shares, with an average of below 6%. This was calculated using available GFD data on price and number of shares, with corrections for the latter imputed based on the consistent mistake of overvaluing number of railroad shares by 100, as described above. This indicates that the exclusion of these problematic shares, even if biased in some direction, likely has a very small impact on the results.

10 The full extent of errors found 1860-1930 can be found in Appendix 2, using data from *Course of the Exchange* and the *Stock Exchange Yearbook* as well. Only errors from 1900-1930 are reported here.

Table 1: Errors found in the Global Financial Data database 1900-1930 and securities excluded

| Category | Shares | % of all 'India' Shares |
|---|---|---|
| *All 'India' shares* | 143 | 100 |
| *Shares with no apparent errors* | 40 | 28 |
| *Shares with errors found and corrected* | 91 | 64 |
| A. Shares with missing dividend data | 70 | 49 |
| B. Shares with missing or erroneous amount of shares, splits etc. | 49 | 34 |
| *Shares excluded* | 12 | 8 |
| C. Shares with apparently missing dividend data (where lack of dividends could not be confirmed) or other missing/corrupted data which could not be corrected. | 11 | 8 |
| D. Shares with missing price data for the period (could potentially be corrected, but not viable within this study) | 1 | 1 |
| *Shares used (Total with C+D excluded)* | 131 | 92 |

Note: Categories A and B overlap with each other.

Source: Author's calculations based on Global Financial Data and Investor's Monthly Manual.

## *V.4. Supplemental Sources*

The sources used to find and correct the above errors were the *Course of The Exchange, Investor's Monthly Manual* and to a smaller extent the *Stock Exchange Yearbook.* All of these were accessed at the Guildhall Library in the City of London. In the end, only data after the year 1900 was useful, effectively limiting the index to a single complementary source, the *Investor's Monthly Manual* (henceforth called *IMM*). Judging from much of the data and nature of errors in the GFD database, this seems to have been their main source for the given years as well. The end year of this study was set to 1930, as this was the final year of the *IMM*. Beyond this point, data would have to be confirmed using other sources, which was beyond the means of this project.

Due to time constraints at the archives, dividend data in the *IMM* was checked in January every other year where available, otherwise February. The reason that checking only every other year was possible is that each issue usually presented the last four dividends of a security, and securities usually had dividends twice per year. That this was only *usually* the case was discovered too late. For this reason, some shares with more frequent dividends (primarily in the mining sector) have known missing dividend data. Also, for the years 1919-1921 dividend data is partially missing for others as well, when the *IMM* experimented with a different format, in some cases presenting only two dividends per year.

## *V.5. Interpreting the Underlying Sources*

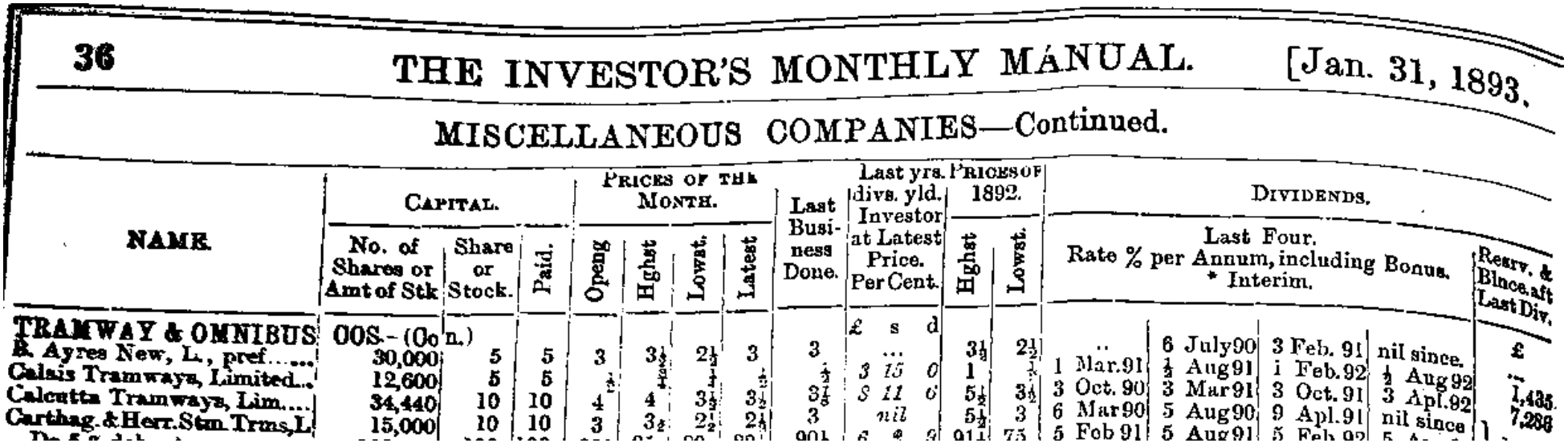
The *Course of The Exchange* and *Investor's Monthly Manual* contain very similar types of data in an almost identical layout. This means that they also produce similar problems of interpretation and, as made obvious by the errors in GFD data, similar potential pitfalls.

Although the *Investor's Monthly Manual* is a frequently used source in this type of research project, there seems to be no good summary on how to interpret it (which could explain some of the issues in GFD data, and discrepancies between results in studies similar to this). For the purposes of this study, the author had to develop their own interpretation, based on cross-referencing data within and between sources. This section serves as both documentation of how these issues were handled, and a possible guide for future researchers and data-compilers using this material.

### Outline of Relevant Headings and Their Meaning

The layout of the CoTE and IMM is fairly consistent over the years, except for the very beginning of the CoTE; a feat that is quite impressive given a combined publication span of about 70 years. Figure 1 shows the top section of a typical IMM page.

Figure 1: Top section of a page in The Investor's Monthly Manual





## MISCELLANEOUS COMPANIES—Continued.

| NAME. | Capital. No. of Shares or Amt of Stk | Share or Stock. | Paid. | Prices of the Month. Openg | Hghst | Lowst. | Latest | Last Business Done. | Last yrs. divs. yld. Investor at Latest Price. Per Cent. | Prices of 1892. Hghst | Lowst. | Dividends. Last Four. Rate % per Annum, including Bonus. * Interim. | | | | Reserv. & Blnce. aft Last Div. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRAMWAY & OMNIBUS COS.—(Con.) | | | | | | | | | £ s d | | | | | | | £ |
| B. Ayres New, L., pref..... | 30,000 | 5 | 5 | 3 | 3½ | 2½ | 3 | 3 | ... | 3½ | 2½ | .. | 6 July90 | 3 Feb. 91 | nil since. | ... |
| Calais Tramways, Limited... | 12,600 | 5 | 5 | ¾ | ¾ | ¾ | ¾ | ¾ | 3 15 0 | 1 | ¾ | 1 Mar.91 | ½ Aug91 | i Feb.92 | ½ Aug92 | 1,435 |
| Calcutta Tramways, Lim.... | 34,440 | 10 | 10 | 4 | 4 | 3½ | 3½ | 3½ | 8 11 6 | 5½ | 3½ | 3 Oct. 90 | 3 Mar91 | 3 Oct. 91 | 3 Apl.92 | 7,286 |
| Carthag. & Herr. Stm. Trms, L. | 15,000 | 10 | 10 | 3 | 3½ | 2½ | 2½ | 3 | nil | 5½ | 3 | 6 Mar90 | 5 Aug90 | 9 Apl.91 | nil since | |
| | | | | | | | | 90½ | 6 ... 9 | 91½ | 75 | 5 Feb 91 | 5 Aug91 | 5 Feb. 92 | 5 Aug92 | |

It is important to note that the headings change between sections even within a particular issue of the publication, so one must carefully read the headings on each page and section from which data is retrieved. Each row represents a security, and the relevant headings should be interpreted as follows[11]:

1. *Name.* Note that this is not a unique identifier for a security, and that old and new issues may have the same name.
2. *Capital.*
    a) *Number of Shares or Amount of Stock.* If a cell in this row contains only a number, it is the number of shares. If, however, the cell obviously contains a monetary amount (e.g. contains a £ or l. sign) the cell describes the total nominal value of all shares. Note that in some sections, this sub-heading is *Subscribed* instead. In those cases, the cells always contain the nominal value, not the number of shares, even if there is no pound sign. Also, this column contains the nominal value if the content of the next column is the word 'Stock' instead of a number.
    b) *Share or Stock.* This is the nominal value of each share. In some cases, there is no number, only the word 'Stock'. In these cases, the nominal value is determined by the Paid column, which is always 100 for these shares.
    c) *Paid.* This column describes the amount that investors have actually paid per share to the company so far. It tends to increase over time, eventually reaching fully paid shares (where *paid* equals nominal value), but can also decrease, implying capital being paid back to investors.
3. *Prices of the month.* These are the opening, highest, lowest and latest prices per share of the month.
4. *Last year's dividend yield. Investor at Latest Price. Per cent.* This is the total dividends of last year divided by current latest price, but expressed in £sd (pound, shilling, pence) percent. Note that 'last year' does not mean dividends paid out in that year, but dividends paid out from business in that year. Typically, dividend payments lag half a year behind the end of the period they are 'for'. For example, half-year dividends paid out in December 1900 or January 1901 typically belong to the first half of 1900.

11 Much of this may seem obvious to researchers experienced in the field, but this large amount of implicit knowledge can apparently cause problems.

The first sub-column are the full percentage points, the second are shilling percentage points (1/20% or 0.05%) and the third are pence percentage points (1/240%). For this study, these numbers were used to double-check data, and were not used directly.

5. *Dividends. Last four. Rate per Cent per annum.* These are the latest dividends of the security, and can be expressed in a variety of ways. Normally, the first number is the amount paid as dividends, which is followed by the abbreviation for the month and year of payment. When the heading says “per annum”, the dividend amount is expressed as an annual percentage value on the *Paid* amount by default. 'Annual' means that, if the share has more than one dividend per year, the actual value of each dividend must be divided by the number of dividends that year (usually 2). Some headings say “per annum, except where marked %” or “per annum, including bonus, except where marked %”. The exception refers to the per annum part, not the bonus. When a dividend is not per annum, the percentage value times the *Paid* amount is the actual dividend.
   In other cases, the dividends are not expressed as percentage values at all. This is made evident by them being displayed in £sd (pound-shilling-pence) format.[12] Unlike the *Last year's dividend* heading, this is not pound-shilling-pence-percent, but absolute values.

   For some shares, especially in later years, individual dividends are not reported. Instead, a percentage value and year is specified, e.g. “30% for 18”. The year is not when dividends were actually paid out, as discussed above. Dividends 'for 18' are typically paid out at the end of 1918 and mid-way through 1919, for example. 30% would mean that the two dividends add up to 30% of the *Paid* amount. Knowledge of this helps in avoiding duplicate dividends.

### Calculating Number of Shares

The sub-headings *Number of Shares or Amount of Stock* and *Subscribed* apparently caused confusion for GFD data collectors. The numbers in the primary sources are quite consistently interpreted as number of shares, even when the number is a sterling amount, at least for Indian railway shares. This is partially explained by these shares having the non-standard sub-heading *Subscribed* in *Investor's Monthly Manual*, which

12 You identify the £sd format by the presence of one of the following symbols: l, d, s or /. For example, 4/3 is not four thirds of a percent, but 4 shillings and 3 pence. Fractions are always represented by horisontal fraction lines in these sources.

indicates that the column contains sterling amounts even if the numbers have no pound sign. However, the issue also exists for GFD data apparently compiled from *Course of The Exchange*.

When there is only an amount of stock available, the correct way to calculate the number of shares is to divide the amount of stock by the nominal value (or paid value, if the column for nominal value only says 'Stock'). Given that many railway shares have a paid value of £100, not following this procedure overstates the number of shares, and thus the market value and index weight, of these companies by a factor of 100.

### Calculating Dividends and Determining Dividend Dates

The first step to correctly calculating dividends is to correctly interpret the source numbers as either an absolute £sd amount, a regular percentage or an annual percentage, as explained in the outline of headings. Absolute £sd amounts can be directly converted to decimal pounds. Percentages are calculated using *Paid* values, not nominal values. Annual percentage dividends need to be divided by the number of dividends that the company has or will have that year.

Sometimes, *Investor's Monthly Manual* aggregates dividends on an annual basis, even when there are several smaller dividends in a year.[13] These were made into half-yearly or more frequent dividends using dividend dates gathered from GFD, or imputed dates following an earlier and/or subsequent pattern for that company. Where the value of one half-yearly dividend was known, the remainder of the full yearly dividend was placed in the other. In years where the value of no individual dividend was known, the fractions for the half-year and end-of-year dividend were taken from previous years, if a pattern had been established. If there was no clear pattern, dividends were split equally over the known dividend dates of that year. Where no date could be found or imputed, the payment was placed on December 31st of that year.

The validity of these calculations and imputations was established by double-checking the data with the *Last years dividend yield* field. Based on non-imputed absolute dividend data, this field was confirmed to be calculated based on dividends from the last calendar year and the *Last price*. The data can be checked by simply adding up all dividends in the last calendar year and divide by the value of the *Last price* field. This

13 It might be wiser to use another source, such as *The Stock Exchange Yearbook* for dividends, as it tends to clearly state each individual previous dividend in absolute terms for a number of years back. However, as information is spread out over a much larger number of pages, this would take significantly more time to compile.

should match the *Last years dividend yield*, converted into a decimal percentage. For all cases checked in this study, these numbers matched.

#### Identifying GFD Series in the Underlying Sources

Combining GFD data with the supplemental sources requires identification of each GFD security with one in the financial press. This is sometimes difficult, as names may not match precisely. Companies with many similarly named series of shares are especially hard to match, for this reason. When a company changes its name, GFD tends to name the entire series after the new name. Furthermore, some names are switched around in the database, or different series that don't belong together are combined into one. For this reason, prices and dividends were also used to identify GFD shares in the IMM. This is not foolproof, and a potential source of error.

# VI. Results

This chapter begins with an overview of the data collected and used. Then, the total returns index for India and sub-indices for economic sectors are presented and compared to data from the U.K. and other countries, and to previous research on empire profits.

## *VI.1. Overview of the Data*

The final sample includes 27 266 observations of either monthly prices, dividends or splits. This is spread over 131 securities, some of which are share variants from the same company. Companies are divided into 7 sectors, as categorised in GFD data, plus a group of companies which where not categorised. The distribution of securities over sectors and periods is given by Table 2. There is a wide range of companies present for the entire period, except for August and beyond in 1914 when GFD data was particularly scarce and only 11 shares were observed. There is no such problem for the first half of 1914, so data from that year is still useful.

Table 2: Number of securities included per sector and period

| Sector | 1900-1913 | 1914-1918 | 1919-1930 | Total |
|---|---|---|---|---|
| Consumer Products | 46 | 31 | 45 | 60 |
| Railroads | 28 | 20 | 22 | 31 |
| Utilities & Telecommunications | 13 | 10 | 12 | 15 |
| Mining | 7 | 6 | 7 | 8 |
| Materials | 2 | 3 | 6 | 7 |
| Transports | 2 | 2 | 2 | 2 |
| Finance | 2 | 2 | 2 | 2 |
| Energy | 1 | 1 | 1 | 1 |
| Real Estate | 1 | 1 | 1 | 1 |
| Uncategorised | 3 | 3 | 3 | 4 |
| Total | 105 | 79 | 101 | 131 |

Source: The author's calculations based on data derived from Global Financial Data and Investor's Monthly Manual.

In the consumer products category, the vast majority of companies are tea plantations, with only 4 that are clearly in another trade. The utilities & telecommunications category includes about an equal share of gas, electric, telegraph and tramway companies, as well as one canal and irrigation company. From this one can conclude that tea plantations are the single most common security, followed by railroads.

The relative importance of each category is quite different when weighted by market capitalisation, as shown in Table 3. For the first two periods, more than half of all money is invested in railroad stocks. In the third period, this share is reduced to just under half. Tea plantations are the second largest sector in all periods. Utilities and telecommunications begin below mining, but take over third place during the war. Mining initially has the third place, with over 8% of the index, but this share is reduced during the war and only slightly recovers after it.

Table 3: Total market capitalisation of sectors (average per period) in million £s. Share of total in parenthesis.

| Sector | 1900-1913 | 1914-1918 | 1919-1930 |
|---|---|---|---|
| Consumer Products | 4.73 (14.23%) | 5.65 (15.64%) | 16.74 (29.20%) |
| Railroads | 21.04 (63.31%) | 20.61 (57.10%) | 26.84 (46.83%) |
| Utilities & Telecommunications | 2.3 (6.92%) | 4.34 (12.03%) | 5.28 (9.22%) |
| Mining | 2.94 (8.84%) | 1.84 (5.09%) | 3.49 (6.09%) |
| Materials | 0.15 (0.46%) | 1.5 (4.16%) | 2.62 (4.58%) |
| Transports | 0.54 (1.64%) | 0.7 (1.94%) | 0.73 (1.28%) |
| Finance | 0.21 (0.64%) | 0.21 (0.59%) | 0.23 (0.40%) |
| Energy | 0.18 (0.54%) | 0.25 (0.69%) | 0.61 (1.06%) |
| Real Estate | 0.58 (1.74%) | 0.4 (1.12%) | 0.33 (0.58%) |
| Uncategorised | 0.56 (1.69%) | 0.59 (1.65%) | 0.44 (0.76%) |
| Total | 33.23 (100%) | 36.1 (100%) | 57.32 (100%) |

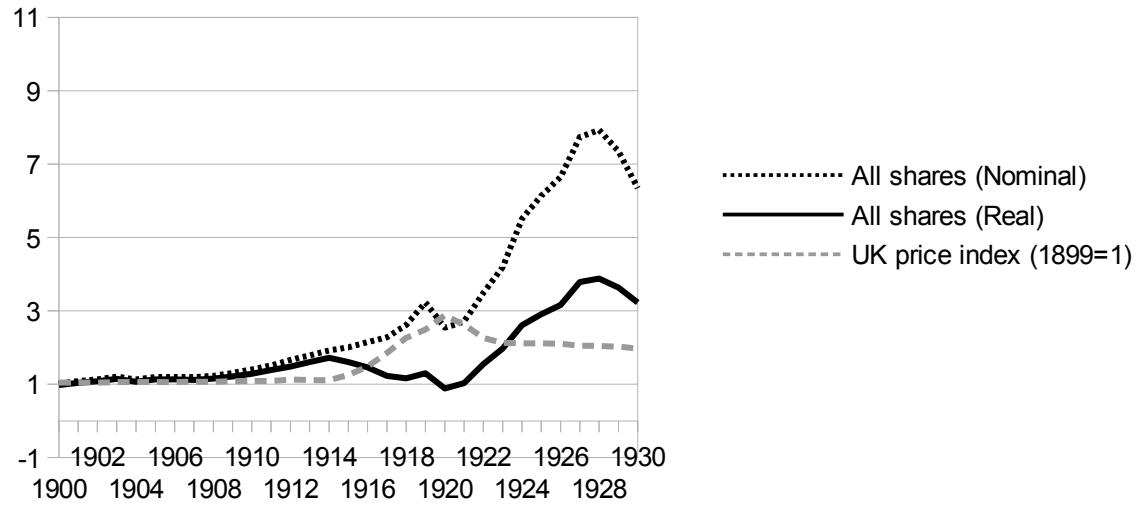
Source: The author's calculations based on data derived from Global Financial Data and Investor's Monthly Manual

### *VI.2. Total Returns Index 1900-1930*

The development of the total returns index is presented in figure 2[14], comparing nominal and inflation-adjusted returns. Over the period of all 31 years, an investor in an average of Indian stock would more than triple their initial investment in real terms. This corresponds to an annual average return of 3,85%. Before the First World War, returns increased at a relatively steady pace. After the outset of war in 1914, returns fell sharply, hitting a low in 1919. During the war, all gains since 1900 were lost, putting investors at a loss overall. Interestingly, nominal returns were increasing, and sharp inflation accounts for all losses, except for a dip in nominal returns in 1919-1920. After the war, returns made a rapid recovery, and increased at a pace well beyond the pre-war returns. A significant part of the increase in real returns was connected to rapid deflation after the war, followed by a slower but steady deflation. Returns are positive until the last two years, where we see the initial signs of the Great Depression.

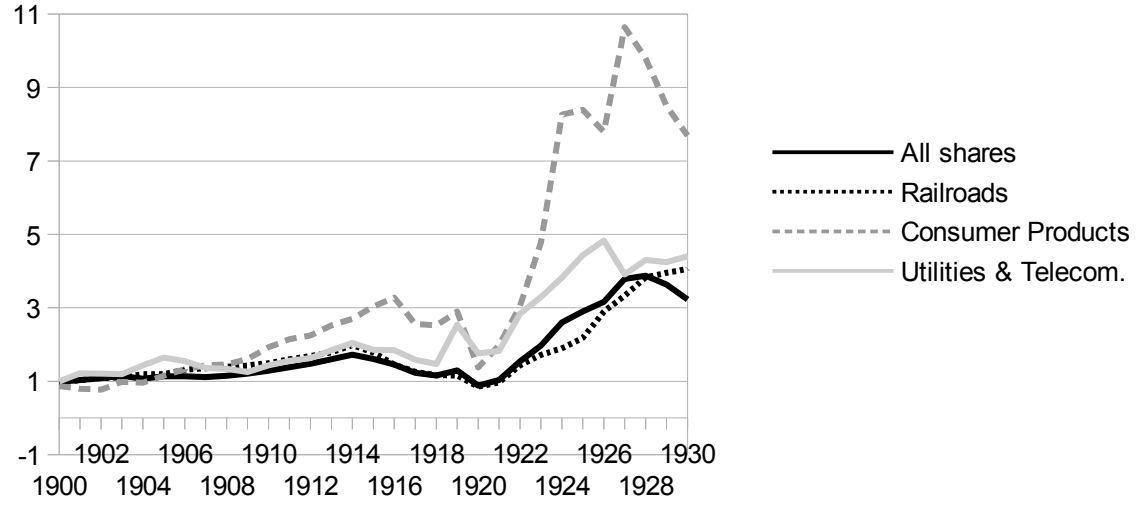
14 Annual numbers for all original data in this chapter can be found in Appendix 1.

Figure 2: Total returns index 1900-1930




Source: Author's calculations based on Global Financial Data and Investor's Monthly Manual. U.K. price index data is from O'Donoghue, Goulding, and Allen (2004).

Figure 3: Total returns index 1900-1930 (Inflation adjusted)



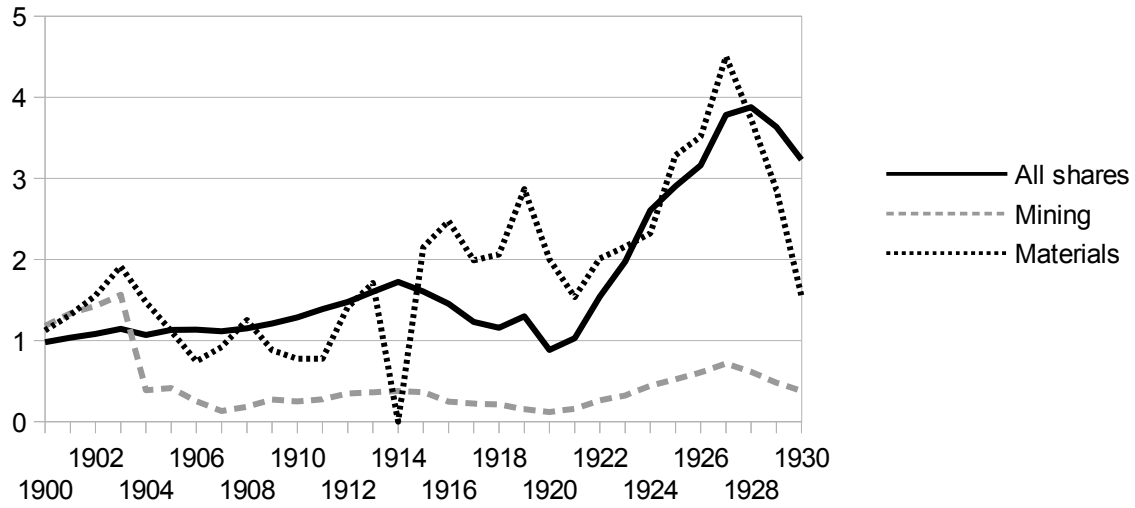

Source: Same as Figure 2.

Sectoral indices are presented in figures 3 and 4, in comparison to the average. Here, we see that railroads fared better than the average stock, with an index value of 4.06 in 1930. In the pre-war era, the returns are consistently higher than that from other shares. After the war, the roles are reversed, but the railroads are relatively unaffected by the 1928 dip in returns, explaining their high final value. This is likely due to their government guarantees.

The far most profitable sector is consumer products, effectively tea plantations. After initial losses in the first few years, the sectoral index value ends up at an astounding 7.68 and a geometric average of 6.8% returns per year. As the sector was hit relatively hard by the depression, returns were even higher before, peaking at over 10 times the initial investment in 1927.

The third largest sector, utilities and telecommunications, also performs better than the average. With a 1930 index value of 4.4 and geometric average of returns on 4.9%, it outdoes the railroad sector but is nowhere near the tea plantations in terms of profitability.

Figure 4: Total returns index 1900-1930 (Inflation adjusted)




Source: Same as figure 2.

Mining, the fourth largest sector, was very disappointing for investors. After 1903, returns took a sharp dip and never recovered, with several more years of large losses coming. In 1930, an investor in average Indian mining stock would have lost 62% of their initial investment in real terms, with a geometric average of -3.07% returns per year. The sample size is quite small in this sector, so these results should be handled with caution. However, a general loss is evident in each individual mining stock included. It should also be noted that some mining dividends are missing from the dataset, but this alone cannot explain these losses, which are primarily due to falling share prices.

The materials sector also performed weakly, with a final index value of 1.54 and a geometric average of 1.45% returns per year. The shares seem to have performed

relatively well for most years, except for a sharp dip in 1914 and after 1928. Since the sample size is very small in this sector, these results may not be meaningful.

The remaining sectors, like real estate, finance and energy, each made up less than 2% of share capital on average. They had varying profitability, but would have had a very small impact on overall returns.

### Compared to The U.K. and The World

The overall pattern of rises and falls in returns is very similar to the U.K. and World indices in Dimson, Marsh, and Staunton (2002). Their total returns index for the U.K. shows returns of 3.1 times the initial investment from 1900 to 1929[15], which is an average return of just under 4% per year. Compared to this number, Indian shares seem to have fared slightly better, with corresponding numbers of 3.63 and 4.4%. However, compared to the Dimson et. al. real return on World equities (using a GDP-weighted index of sixteen countries), the Indian shares were relatively weak. From 1900 to 1929, World assets produced total returns of 4.7 times the initial investment. Only the Indian tea plantations performed better than this.

While very similar in method, the Dimson et. al. index is not completely comparable to the one in this study. They exclude preference shares and include only the 100 largest companies at the start of the year. Perhaps more importantly, they convert all indices to US dollar terms and correct for US inflation, while the series in this study uses pound sterling and corresponding inflation.

A perhaps better comparison is Grossman (2015), where the author takes a British perspective. One problem with this paper is that there is no adjustment for inflation. This is easily remedied using the same price index as in the index of this study, and should then give comparable results. After adjustment, his U.K. index produces a slightly higher end-of-period value of 3.25 in 1928, corresponding to an average yearly return of 4.15%. This is higher than our Indian average, but excludes the sharp fall in profits after 1928. If our index is reduced to the same span of years, the final index value is 3.88 and the average annual returns 4.78%. While Grossman's results indicate slightly better returns for U.K. domestic shares than Dimson et. al., total returns were still lower than in India.

15 While the index Dimson et. al. continues until the end of the century, the data as presented in their book cannot be disaggregated in a way that allows inclusion of the year 1930.

### Compared to Earlier Studies of India

For Asia, Grossman (2015, 484, Table 2) shows total returns of 5.98% for 1899-1908, 10.36% for 1909-1918 and 16.81% for 1919-1928. This is substantially higher than the numbers produced in this study, but the numbers presented do not allow for a comparison of India specifically.

The most similar study which includes Indian shares and allows for a disaggregated comparison of sectors is that of Edelstein (1982), which uses largely the same sources but for an earlier period. It covers a set of "first- and second-class" investments between 1870 and 1913, using the Investor's Monthly Manual as its main source (ibid., 115-116). It is an early total returns index, but with equal weights. Unlike this study, Edelstein individually calculates returns for common, preference and debenture shares. Series of relevance are Indian railway equities and debentures, social overhead of India and China, and the general tea and coffee index, and their relation to the domestic British returns. Edelstein's coverage of India is smaller in sample size, covering an average of about 10 companies in each of the above categories.

Unfortunately, yearly data is not available from Edelstein's work. This would have allowed a direct comparison of the period 1900-1913. Instead, only geometric means over the entire period are available.

In Edelstein's study of railway equity, Indian shares performed slightly better than the domestic British, with average yearly returns of 4.97% compared to 4.33%. However, they performed much worse than Latin American and US railways, which both had returns around 8.4% (Edelstein 1982, 123). Comparing this to Edelstein's numbers on average domestic U.K. returns in general (Edelstein 1982, 126), Indian railway equity had about .3% higher yearly returns than the average, whereas domestic railways had returns about as far below average. For railway debenture shares, however, Indian performance was slightly lower than the domestic railways, with yearly returns of 3.65% compared to domestic railway debentures at 3.74%. This goes against the general trend of empire shares being more profitable than domestic, and is an outlier that Edelstein has no real explanation for (Edelstein 1982, 123–25 and 135).

It is possible that the small advantage of Indian railway equity, and the weak performance of railway debenture, was only because these businesses had not yet reached a stage of profitable maturity. Davis and Huttenback (1986, 97) note that empire railroads were not more profitable than their domestic counterparts, except for "the last three years before 1912". Looking at the US experience, they note that railways

took a relatively long time to become profitable, and they ask if this could also apply to empire railways (Davis and Huttenback 1986, 311). Did Indian railways become more profitable later, then?

The average returns from railways are indeed higher than in Edelstein's results. However, this is largely explained by their excellent performance in the post-war period, where yearly returns reached 9.43%. This was at a time when the world economy and stock markets were booming in general, and other shares in the index had similarly increasing returns. According to Dimson, Marsh, and Staunton (2002, 303) the real rate of return on U.K. domestic shares between 1920 and 1929 were at 9.3% per year. In other words, although their returns did increase, Indian railway equities were still barely outdoing the average domestic share.

Concerning social overhead, Indian returns are apparently lower in our index than for Edelstein's period, where the average yearly return is 7.48%, although his index also includes an unknown portion of Chinese shares. Neither telecommunications and utilities, nor tramways, reach anywhere near these numbers, indicating a falling rate of return.

For tea, there appears to be a similar fall in profits relative to Edelstein's results. His general tea and coffee index had yearly returns of 9.34% (Edelstein 1982, 123). This is significantly more than the 6.8% found in this study. Therefore, profits appear to have been falling over time. Davis and Huttenback (1986, 103) note that Indian and Ceylon tea and coffee were among the most profitable in the extractive and agriculture sector, looking at the same period as Edelstein. They also note that early entries into Indian tea were profitable, but that later entries fared less well during that era. Part of the discrepancy in profits could be explained by selection bias on Edelstein's part, where “first- and second class” securities may have included only the more established and profitable plantations. Nevertheless, the results of this study show that, while probably declining relatively and absolutely, profits from Indian tea remained higher than the average until at least 1928.

# VII. Discussion

The aim of this study was to test the theory of finance imperialism on British India, by testing whether or not investment in British India was more profitable than investment in the U.K. and foreign countries, and if new empirical study of Indian profits would change the picture given by previous studies.

Previous research indicated that investments outside the empire were more profitable than within, at least between 1880 and 1900. After that, profits seemed to converge, giving hope to the idea that returns in the formal empire would overtake the rest of the world. This study shows that this was not the case, at least not in India before 1930. Although Indian returns were slightly higher than domestic U.K. returns, investors would have been better off placing their money in the US or Europe. Indian tea companies did have exceptionally high returns, but there were probably similarly exceptional industries in the more developed countries, invisible in a comparison of averages.

Svedberg's (1981) study indicates that investments in the dependent empire could have become relatively profitable after 1938. However, he also showed that these benefits were largely lost at independence. For India, this would mean that there are 17 years of yet unknown profits waiting to be researched between 1931 and 1947. It is highly unlikely that profits in this period were so high as to counteract the sub-par profits earned in India before 1931.

These results do not speak in favour of the common interpretation of finance imperialism, as defined in this thesis. Nevertheless, capital exports imperialism has a few possible 'outs' which need to be discussed. For one, this study has not dealt thoroughly with the aspect of risk. The inclusion of relatively safe assets, such as preference shares, in the index has likely reduced average returns. Given that a majority of the index is made up of railway stock with government guarantees, this effect could be substantial. Furthermore, if Indian and empire equity was perceived as relatively safe in general, investors may have preferred it to investment outside the empire even if average returns were lower. If non-Indian and/or non-empire stocks were more risky and had higher returns, this could explain why Grossman (2015) shows much higher returns for Asia in general than the results from India produced in this study. However, the concept of empire as a destination for safe but low-yield investments would contradict the higher returns from formal empire in (Svedberg 1981). India could be an exception to this case, or the difference may be due to Svedberg studying a later period of higher monopolistic exploitation.

The search for safe investment opportunities, rather than highly profitable, could have motivated expansion. However, using risk-aversion as the principal explanation would move the concept of finance imperialism more into the realm of psychology than that of

political economy. A theory of finance imperialism based on this idea would need to be backed up by qualitative data supporting a strong interest in safe investments.

Another possibility is that the interest in empire was driven by irrational expectations of financial profit. The failure of Indian gold mines indicates the existence of delusional expectations. However, if such expectations pushed for expansion, why did not Britain get rid of the empire when it proved to be unprofitable? Gallagher and Robinson (1953) argued that the political reforms that eventually led to colonial independence were not a process of actively letting go of empire. Instead, they were part of a strategy to stay in control by other means. If the empire had only been a disappointment, this urgent need to maintain power would make little sense.

There is one form of capital exports imperialism that the results support. Davis and Huttenback (1986) showed that different sections of the British capitalist classes had different patterns of investment. Cain and Hopkins (2001, 167–83) built upon this research, arguing that 'gentlemanly capitalists' had a preference to invest in the empire because of their social connections with people in the top ranks of colonial administration. In effect, these two classes were largely the same. Furthermore, gentlemanly capitalists dealt in other types of business than the industrial businessmen. Agriculture, mining, railways and finance was their game, not manufactures. When they looked for investment abroad, this led them to the dependent empire rather than developed industrial countries. Furthermore, these elites paid a smaller share of the taxes needed to maintain the empire, so the costs were not an issue to them. As Davis and Huttenback (1986, 211) put it: “Britain was not one capital market but two.”

Following this line of reasoning, higher profits in the US or Europe is not evidence that a push for capital exports would have resulted in investment there instead. If gentlemanly capitalists had influence over imperial policy, they would direct it towards investments that fitted them, not the industrial capitalists. In this conception of finance imperialism, it was not capitalism *per se* that caused the expansion of formal empire. Yes, the falling rate of profit in Britain caused a push for capital exports but the direction of these exports was determined by closed-minded elites with a lack of appreciation for industry. In a sense, it was the underdevelopment of the British capitalist class that was to blame for imperial ambitions, not the advance of capitalism.

The results of this study indicate higher returns in India than in the U.K., which speaks in favour of this theory. The problem with this view is that it would only apply to British conditions. It can hardly explain the imperial ambitions of the US, Germany or France,

where we can assume that aristocratic bias had little role in the economy. While Lenin seemed to have forgotten Britain, this theory would forget Britain's rivals.

Another aspect of finance imperialism, which this author has not seen discussed, is the analytical separation of expansion and maintenance of empire. Interests behind one may be different from interests behind the other. There is evidence that newly opened areas yielded very high profits, which were later driven down by competition (Davis and Huttenback 1986, 110). This makes theoretical sense from a perspective of falling marginal returns. Over time, the potential profits from old imperial territories may have fallen, but the pioneer investors would have already made their gains. When this potential had been spent, investors would have an increased interest in expanding to new territories where profits would be higher. Some evidence indicates that the elites who invested in the empire early divested from it once profits proved low, and passed on the ownership of these substandard shares to “women, children and retirees” among others (Davis and Huttenback 1986, 314).

Thus, it is somewhat strange to try to explain the expansion of empire by looking at profits from the existing empire. This only makes sense if investors' expectations of profit in, say, a newly opened Africa were based on their experiences of mature markets in India. Surely, capitalists at the time knew the difference between young and old markets.

Once the initial boom of investment had taken place, a new territory would be deeply intertwined with the British economy. Even if profits fell, the area could not be abandoned without causing an immediate crisis for the involved business interests. For example, it was acknowledged that if India defaulted on its loans, this would cause a financial crisis in Britain (Cain and Hopkins 2001, 295). Maintaining British control was a necessary component in preventing defaults. High rates of return may prompt expansion, but low rates of return don't necessarily prompt abandonment. A test of financial imperialism along these lines would require a very different method.

### *VII.1. Alternatives to the 'Hobson-Lenin hypothesis'*

Because of its political significance, on both national and international levels, some will find it tempting to hold fast to the 'Hobson-Lenin' theory of financial imperialism. For many, it would be hard to accept a lack of clear financial benefits to the imperial metropoles. However, those who want to rescue the idea of economic imperialism might want to expand their horizon, because the field covers much more than the interpretation

of financial imperialism that is often discussed. It is possible that this interpretation is representative of what many neo-Marxist theorists believe today, but it is not a fair representation of Hobson or Lenin. There is still much to explore in these classics. The viability of a more nuanced take on financial imperialism is evidenced by the recent work of Cain and Hopkins (2001), which shows that economic and class-based explanations for imperialism have a basis in empirical evidence, if one does not fixate solely on relative levels of profits. British trade, investment and service interests were closely interlinked through the importance of British currency globally.

Other arguments are applicable outside Britain as well. For example, the importance of opening new markets is all too often cast aside. Finding buyers for an increasing mass production of goods is central to maintaining profits, and lies not only in the interest of industry, but also traders and finance. O'Brien (1988) does give this matter serious thought, along with the idea that the empire was necessary for settling trade deficits. He concludes that the empire was not necessary, using the standard *laissez-faire* argument: if the British didn't trade with India or the empire, they could trade with someone else. Or, if there was no formal control over the empire, free trade with these countries would still have been possible.

It is interesting to note that Hobson (1902) makes a similar argument. He did not consider the empire necessary for Britain. The particular trade arrangements were only in place because special interest groups had captured economic and foreign policy. Under truly free trade, any function that India or the empire played could be performed by some other country, or within the domestic economy. However, unlike O'Brien (1988), Hobson held that Britain could only be freed from the grip of big finance and industry by a radical re-distribution of land and wealth. The imperial pattern of trade and investment could only be changed if big business was replaced by small scale manufactures (Hobson 1902, 79–99).

Thus, Hobson recognises that the imperial trade patterns are deeply tied to the internal industrial structure of Britain. An abandonment of the imperial connection would mean a significant crisis for British business. For O'Brien, this is not a huge problem, because business would eventually adapt to new conditions under free trade.

For Lenin, crises increase concentration of capital among those that are less affected (Lenin 2005, chap. I). Extrapolating from this idea, abandonment of the empire would have significant drawbacks. If Britain's economy had to go through a crisis of re-adaptation to a non-empire economy, it would fall behind in the global competition for

monopolistic power and control. O'Brien does not engage with this concept of power in determining costs and benefits for Britain.

Furthermore, the alternative to direct control was not likely to be free trade. A late 19th century politician expressed his belief that the alternative to British presence in India would be anarchy, which would prevent trade (Cain and Hopkins 2001, 289). In other cases, the alternative seemed to be control by rivals. Expansion in Africa had explicit motives in the concern that rival powers would gain a foothold otherwise (Gallagher and Robinson 1953). British interests in Siam were heightened by fears of France taking over the territory if Britain did not control it. This would destroy British trade if France took protectionist action (Davis and Huttenback 1986, 265).

Thus, the importance of empire for commodity trade hinges on different understandings of the relevant counterfactuals, which in turn hinge on different understandings of the free market, monopoly power and crises. This ideological rift can explain why meaningful debate on the subject is rare, and why capital exports have generated more fruitful research.

### The Interactions and Contradictions of Economic Interests

The presence of multiple economic logics does not invalidate economic explanations, unlike what Davis and Huttenback (1986, 279) seem to conclude. Cain and Hopkins (2001) paint a riveting picture of the many economic interests of Britain and their interactions. The current economic situation, ideology and political power relations determined which interests directed policy in a given moment. Even if, like Cain and Hopkins propose, there was a class of gentlemanly capitalists who almost always got their way, *their* interests in the empire were internally conflicting and evolving as well. Therefore, measures of economic performance in the empire along a single parameter are likely to produce irregular results.

The case of Indian development serves as a good example of this. Economic development, through railroads and other public utilities, could serve to increase profits of existing and future Indian business. Furthermore, if expansion of trade was an important part of imperialism, development served to expand the size of colonial markets. Not only would these markets be able to absorb more consumer goods, but the investments themselves generated demand for capital goods[16].

16 Edelstein found a regular covariance between returns on overseas railways and social-overhead sectors and the U.K. suppliers of their capital goods (Edelstein 1982, 158). This gives some credibility to this aspect of Luxemburg's theory.

However, if this was the case, and economic interests did drive imperial policy, why was India not developed further? The success of the project was quite limited, and the exploitation of economic potential through development seems not to have been the first priority (Davis and Huttenback 1986, 118–42). The absence of massive profits evidenced by this study is in line with such an interpretation.

Part of the explanation can be found in competing interests, even within the gentlemanly capitalist class. The government of India was heavily burdened by debt, limiting development. British finance, as creditors of this debt, had an interest in maintaining interest payments in spite of these difficulties (Cain and Hopkins 2001, 295). Furthermore, previous experience from the white settlements showed that excessive development could empower the inhabitants of the colony to the point of rebellion, which in turn could lead to the growth of a new economic rival. Fears of increased autonomy were ever present (Barber 1975, 105–6). Tariffs in support of Indian industry would be problematic for several reasons. The diverse economic interests of Britain were held together by an ideology of free trade. Breaking with this could threaten the legitimacy of the system on which 'gentlemanly capitalism' rested (Cain and Hopkins 2001). Cheap imports were vital to India, because of its poor and heavily taxed population. Tariffs would also threaten the existing trade patterns with Britain (ibid., 296). A similar logic could explain why monopolistic exploitation was not pursued harder. Britain had a large trade surplus towards India and other underdeveloped countries (ibid., 201). If economic exploitation was intensified, the Indian capacity to buy British goods would fall.

It is possible that the empire allowed Britain to pursue development abroad under controlled conditions, carefully weighing different economic and political factors against each other. This would have been difficult in relation to independent states.

On the other hand, there are cases where the British commitment to any sort of imperial logic seems lacking, or ambivalent. For example, the Indian government refused entry to American Standard Oil, in an effort to support British interests (Davis and Huttenback 1986, 262). However, Treasury expressed opposition to assisting British enterprise “in its struggle with foreign rivals”, at least with taxpayer money (ibid., 263).

Perhaps, the twin issues of diverse economic interests and a commitment to free trade made Britain a poor subject for an unambiguous imperialism. This is not necessarily evidence for a lack of an economic logic to imperialism. On the contrary, the difficulties to pursue unapologetic imperialism may contribute to an explanation of the relative

decline of the U.K. as a world power. In younger capitalist economies, like the U.S. or Germany, higher degrees of monopoly may have made it easier to align state and business interests in a quest for global power.

In any case, the actual economic interests at stake in 19th and 20th century Britain made up a complex, contradictory and evolving web. The problem with complexity is that it does not easily lend itself to the production of mathematically testable hypotheses, or generalised theories applicable to many countries. One of the attractions of the caricatured 'Hobson-Lenin hypothesis' is that it allows for quantitative tests on any imperial nation. Perhaps this is the future task of proponents of economic explanations of empire: to take initiative in formulating new tests of economic imperialism. Empire may not have been a “snare and a delusion” as Davis and Huttenback (1986, 110) stated, but the capital exports interpretation of finance imperialism, perhaps, is.

## *VII.2. Future Research*

The study of financial imperialism is far from finished, even in the narrow interpretation focusing on capital exports. For India, a total returns index such as the one presented here could be extended further ahead and backwards in time. Using the same sources, corresponding indices could be constructed for other parts of the empire, and the world. This is useful even for the previously researched period 1860-1912, because of potentially flawed sampling and weights in previous studies. A comparison with other less developed countries in the same period would also be of interest, to test if formal control in India meant higher profits relative to non-empire regions of similar development.

Unfortunately, the Global Financial Data database contains severe problems, at least in its India data. Using it requires a large amount of data checking and correction. Its advantage is its comprehensiveness, especially in price data, while other databases are usually digitised versions of a single financial paper (i.e. the Investor's Monthly Manual). A disadvantage is that it is hard to know the original source for any specific data point, which makes verification very difficult. Furthermore, researchers would have to find a better way to categorise companies by country and type of asset. The methods applied by the GFD data collectors is unclear, and sometimes seem arbitrary. Finally, changes in 'paid' values need to be collected separately and corrected for, at least for the period before 1900.

Using the same methods on sources from other countries, allowing for a comparison of the British experience with other empires, would allow for a better test of a 'general' finance imperialism. In theory, there is also room for a wide range of research projects using alternative interpretations of finance imperialism. However, it remains to be seen what materials and methods could be used to construct quantitative tests of these interpretations.

# VIII. Conclusions

The rate of return on Indian equity on the London Stock Exchange 1900-1930 was slightly higher than for domestic U.K. equity during the same period. However, it was not higher than in countries outside the British Empire. Previous research indicated that empire returns were lower than domestic from 1880, but were catching up after 1900. The results of this study are in line with this, and indicate that empire returns eventually became higher than domestic.

If India is representative of the dependent empire, finance imperialism – understood as a growing surplus of capital pushing developed states to take formal control over foreign territory – only works as an explanation for British imperialism in this period under certain conditions. Previous research suggests that a class of 'gentlemanly capitalists' were influential in imperial policy and were biased against investment in manufacturing. This would have made them less prone to invest in the profitable equity markets of the US or Europe. If this is true, their search for investment opportunities in finance, infrastructure and extractive industries could have pushed Britain to expand and maintain its formal influence overseas. However, such a theory of imperialism would not be generalisable to other imperialist states, as the gentlemanly capitalists were a British phenomenon. Another possibility is that the desire to export capital motivated expansion of empire into new and highly profitable areas, but that the desire to maintain control after profits fell had different sources.

In any case, Britain as a whole would seemingly have been better off placing its money in developed countries in the early 20$^{th}$ century. For this reason, previous researchers have concluded that formal empire only benefited certain investors who lacked knowledge or experience in industrial investments. However, the presence and importance of these investors to the British economy has to be taken into account. They *did* control a significant share of capital, and therefore their limited investment horizon helped define the *de facto* limits to British capital exports. Given these limits, formal

empire may have been the only realistic means to raise profits. Furthermore, given the key role that these gentlemanly capitalists played in making Britain the global centre of finance and commerce, separating their interests from a 'British' interest is not so easy.

If control made India more profitable than similar non-controlled countries in this period remains to be seen. However, theorists and researchers suggest many other economic benefits of formal control, and it would be unwise to base a judgement of economic imperialism in its entirety on this single parameter. Theory, both classical and new, offers a more complex picture which deserves to be researched in earnest.

Still, research along the lines of this study has not been exhausted. Using the same or similar sources and methods, indices can be constructed for more countries and longer periods. A continuous index from 1860 to 1970 should be possible for India and other countries.

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# Appendix 1: Total returns index

Table 4: Total returns index 1900-1930, adjusted for inflation. (Beginning of January 1900 = 1)

| Year | All | Railroads | Consumer Products | Utilities & Telecom. | Mining | Materials | U.K. Price Index (1899=1) |
|---|---|---|---|---|---|---|---|
| 1900 | 0,98 | 0,97 | 0,87 | 0,99 | 1,18 | 1,12 | 1,05 |
| 1901 | 1,04 | 1,03 | 0,8 | 1,22 | 1,34 | 1,32 | 1,05 |
| 1902 | 1,08 | 1,09 | 0,77 | 1,21 | 1,43 | 1,55 | 1,05 |
| 1903 | 1,14 | 1,10 | 0,98 | 1,19 | 1,56 | 1,91 | 1,06 |
| 1904 | 1,07 | 1,19 | 0,96 | 1,43 | 0,39 | 1,48 | 1,06 |
| 1905 | 1,13 | 1,20 | 1,15 | 1,64 | 0,41 | 1,12 | 1,06 |
| 1906 | 1,13 | 1,31 | 1,33 | 1,54 | 0,25 | 0,74 | 1,06 |
| 1907 | 1,11 | 1,36 | 1,44 | 1,36 | 0,13 | 0,92 | 1,07 |
| 1908 | 1,15 | 1,39 | 1,46 | 1,34 | 0,18 | 1,25 | 1,07 |
| 1909 | 1,21 | 1,43 | 1,6 | 1,25 | 0,27 | 0,88 | 1,08 |
| 1910 | 1,29 | 1,49 | 1,93 | 1,44 | 0,25 | 0,78 | 1,09 |
| 1911 | 1,39 | 1,60 | 2,14 | 1,56 | 0,28 | 0,78 | 1,09 |
| 1912 | 1,48 | 1,69 | 2,25 | 1,63 | 0,35 | 1,41 | 1,13 |
| 1913 | 1,60 | 1,79 | 2,53 | 1,85 | 0,36 | 1,71 | 1,11 |
| 1914 | 1,72 | 1,98 | 2,7 | 2,04 | 0,38 |  | 1,11 |
| 1915 | 1,61 | 1,78 | 3,04 | 1,85 | 0,36 | 2,15 | 1,25 |
| 1916 | 1,45 | 1,46 | 3,28 | 1,85 | 0,25 | 2,47 | 1,48 |
| 1917 | 1,23 | 1,26 | 2,56 | 1,58 | 0,22 | 1,99 | 1,85 |
| 1918 | 1,16 | 1,16 | 2,52 | 1,47 | 0,21 | 2,06 | 2,26 |
| 1919 | 1,30 | 1,16 | 2,9 | 2,54 | 0,15 | 2,87 | 2,49 |
| 1920 | 0,88 | 0,85 | 1,37 | 1,76 | 0,12 | 2 | 2,88 |
| 1921 | 1,03 | 0,97 | 1,98 | 1,82 | 0,16 | 1,54 | 2,63 |
| 1922 | 1,54 | 1,43 | 3,04 | 2,84 | 0,26 | 2,01 | 2,26 |
| 1923 | 1,97 | 1,72 | 4,77 | 3,29 | 0,32 | 2,16 | 2,13 |
| 1924 | 2,60 | 1,90 | 8,26 | 3,82 | 0,44 | 2,32 | 2,11 |
| 1925 | 2,90 | 2,18 | 8,39 | 4,43 | 0,52 | 3,29 | 2,11 |
| 1926 | 3,16 | 2,89 | 7,79 | 4,84 | 0,61 | 3,52 | 2,10 |
| 1927 | 3,78 | 3,33 | 10,65 | 3,91 | 0,72 | 4,5 | 2,05 |
| 1928 | 3,88 | 3,83 | 9,79 | 4,3 | 0,61 | 3,73 | 2,05 |
| 1929 | 3,63 | 3,95 | 8,5 | 4,24 | 0,48 | 2,86 | 2,02 |
| 1930 | 3,23 | 4,06 | 7,68 | 4,4 | 0,38 | 1,54 | 1,97 |

Source: Author's calculations based on Global Financial Data and Investor's Monthly Manual. Price index retrieved from *(O'Donoghue, Goulding, and Allen 2004)*.

# Appendix 2: Extent of errors in Global Financial Data

Table 5: Errors found in the Global Financial Data database 1860-1930

| Category | Shares | % of all 'India' shares |
|---|---|---|
| All 'India' shares | 231 | 100 |
| A. Shares with missing dividend data | 108 | 47 |
| B. Shares with missing or erroneous amount of shares, splits etc. | 51 | 22 |
| C. Shares with apparently missing dividend data (where lack of dividends could not be confirmed) or other missing data which could not be corrected. | 39 | 17 |

Note: A+B overlap with each other.

Source: Author's calculations based on Global Financial Data, Course of The Exchange, Investor's Monthly Manual and the Stock Exchange Yearbook.