Money and Overseas Investments in the Relative Fall of British Empire

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Abstract

Investigating on the reasons of British overseas investments (1850-1913) we analyze two different approaches on data and we conclude that they are not different from a stochastic view. Inquiring on 'push' approach, we find that exists a negative correlation between GDP and overseas investments where the former cause the latter. The link between monetary events and colonialism highlights India's role as a reserve of bullions. In this way, British capital was able to complete its natural cycle, draining money for future foreign investments. This improve the theory by introducing the monetary element in 'push' and 'pull' hypothesis as well.

JEL Classifications: N10, N13.

Key words: Overseas Investments, Bimetallism, Gold Standard.

1 Introduction

From the classical work of J. A. Hobson[1] (1902) on British imperialism, several economists and economic historians focused on the reasons of UK overseas investments over the nineteenth and twentieth century till I World War. We can group the theories explaining the reasons of British overseas investments in two main categories: the push theories, according to which capital was pushed out by domestic elements, and the pull theories, based on a main idea of funds outflow, due to superior investment opportunities abroad.

One of the most important advisor of the push theory is C. K. Hobson[2]. He guessed that the unbalanced income distribution generated an excess of saving that was not absorbed in domestic market and so flowed out abroad. This hypothesis is based on a deficit of the aggregated demand due to a low consumption level which depressed the expected profitability of internal investment planes, pushing out the capitals. Kennedys' analysis[3] based on other arguments. He related the flow of overseas investments to low risk profile of British investors. Domestic investments were highly risky because of lack of information and for inefficient organization of domestic capital market, especially the bank one. This intuition is supported by a comparison with what happened in the same period in Germany where a bank based capital market was the instrument to finance enterprises and locate saving. Differently, British enterprises had not comparable conditions at home; only public administrations and corporations managing public utilities, had easy access to capital market[4].

The most influential exponent of the pull theory is Edelstein[5] (1976). He explains the outflow of British capital considering the highest foreign returns in respect of the domestic ones. However Edelstein did not exclude the push hypothesis, showing that in

Great Britain part of the saving excess flew out because of the exceptionally low returns of British securities, mainly during 1897-1909.

Both theories are satisfactory and could be improved by introducing new focuses and discussion elements. The problem of foreign investments attractiveness and of low domestic returns is solved in the capital proclivity moving where its yields are relatively higher. The differential between home and foreign returns sets out the direction by which capital will move. Such a differential embodies the pull and the push hypothesis, making difficult to establish if domestic returns were too much low or foreign ones extremely high. In order to support the push theories, we could refer to the long run relative fall of British economy. This was the structural reason determining the capital movement away from Great Britain. A further element to be analyzed is the role of international monetary context. Monetary stability is a relevant component in the capital moving process from an economy to another. First the international bimetallism and then the achievement of Gold standard ensured such a stability lowering the risk of capital losses. Related to monetary the point is the British colonial policy which found in the overseas investments an useful device for draining money, especially by Indian economy.

According to the purposes of this work, the first step to be taken is to choose data concerning the overseas investments, considering several reconstructions based on different methods. Thereafter analysis can run through the relative fall of British economy and its impact on capital outflows, and then through the role of monetary stability, finally considering how Great Britain drained money by Indian colonies by mean of the overseas investments.

2 The Overseas Investments accounting.

The choice of the database of British capital movements abroad involves several difficulties related to the nature of data reconstruction, covered range of time and availability of series in real values.

The available datasets mainly are built on two research methods, the indirect one, or residual, and the direct one.

Reconstruction through indirect method consists in aggregating current account balances excluding bullion movements. The main hypothesis states that such balances represents the potential demand of British investors for foreign assets. To accomplish an estimation of abroad invested capital stock, it needs to be assumed a lack of gains or losses in capital stock and an irrelevance of amount of repatriated funds. The international stability of gold-silver ratio until early 1870s and the adoption of pure Gold Standard from 1873 onward warranted the first hypothesis. The second one is sustained by Imlah(1958) who guesses that, until I World War, it solely happened an adjustments in the geographical composition of British funds already invested abroad. As this method deals with current account balances, reconstruction consistency of these items determines the estimated overseas investments reliability. Only from 1853 we have official data on balance trade, included re-exports, provided by *Annual Statement of Trade of the UK with Foreign Countries and British Possessions*. Another relevant issue is treating of property income from abroad.

Pioneers of the indirect method were Seyd[6] (1876) and Shaw-Lefevre[7] (1878), but their reconstructions are limited to few years. The first systematic attempt is due to C. K. Hobson(1963). He covered a wider period from 1870 to 1913. The new introduced elements are the inclusion of bullions and the approximated quantification of property income from abroad and shipment incomes.

The most significant contribution to reconstruction of British overseas investments estimation through indirect method is due to the impressive work of Imlah(1958). His research cover almost a century, 1816-1913. His originality lives in methodological intuition for which Imlah is induced to include bullion movements in current account balances. He guesses that, from middle nineteenth century, bullions movements are even more attributable to capital movements rather than goods ones. Moreover he underlines the increasing importance of interest and dividend balances from early 1870s onward, testifying the relevance of Britain exported capital flows. The robustness of Imlah estimations is confirmed by Feinstein[8] (1972). Although a different handling of bullion movements exists, the two reconstructions depict same time path of overseas investments. Feinstein considers these movements as a part of capital movements but he excludes them from computation; however his statement does not significantly modify the quantification of capital outflow provided by Imlah.

Differently from the residual method, the direct one try to estimate the foreign assets held by British investors starting from the variations of distinct elements of this wealth. The questions raised by this methodology range from problematical collection of data on overseas financial assets held by citizens and institutions, to uncertain definition of wealth stock to get, in second step, the pace, and to impossibility of singling out if the financial flows managed in the City were British investors' own or they simply passed through the major financial market of that epoch. Finally this kind of estimation does not count for investments outside official financial market, as direct investments. Just this logical distinction between portfolio investments and direct investments is, at the same time, value and limit of the most notable direct reconstruction due to Simon[9] (1967a). The author focused on new issues of assets taken from *Investor Monthly Manual* and *The Stock Exchange Year Book, Burdett's Official Intelligence*. In his analysis overseas

investments coincide in foreign portfolio investments while foreign direct investments, as constitutions, acquisitions or participations of enterprises are not included. Simon's analysis is rigorous and accurate for the new issues, representing the best estimation with direct method for this component of the overseas investments, but it is not complete for the lack of foreign direct investments[10].

3 The two approaches in a comparative perspective.

Recognizing, from previous section, the prevalence of indirect method, we need to select a choosing criterion between the best estimations for each method, the Imlah and Simon series, to get the fit one according to our purposes of long run analysis.

From graphical shape of time series it arises that, though methodological divergences, the two estimations converge into common value in the last years and they are correlated over the whole period, 1870-1913. Solely in 1890-1900 simple correlation is weak.

Figure1.

Stochastic analysis, statistically more robust, confirms what simple correlation outcrops. The two time series are generated by the same process. Both are first order integrated series[11] and follow an autoregressive first order process as we can get by ARIMA identification using the reduction method proposed by Hendry(1997).

$$Imlah^{12} = 4.3 + 0.916AR(1) \tag{1}$$

$$R^2_c = 0.824$$

$$Simon^{13} = 4.5 + 0.867AR(1) \tag{2}$$

$$R^2_c = 0.697$$

In additional, conducing the Wald test on autoregressive coefficients, they result statistically not different (see Appendix 1 table 1).

From a stochastic point of view it is not different use one of the two series. Other issues advice to choose the Imalh estimations in advance. First, time series availability in real values, proposed by Deane[14] (1968) and built on Imlah price index, second, the fullness of indirect method including foreign direct investments, and finally the length of time series covering a longer period, 1820-1913.

4 British relative fall as basis of overseas investments dynamics.

The growth of Great Britain is a classical field of work for economic historians and economists. Several advances have been performed from the pioneer work of Deane and Cole[15] (1962). Crafts[16] (1983) and Crafts and Hurley[17] (1993) threw new light on effectiveness of British economic growth before 1830. Especially in the early thirties of nineteenth century British per capita GDP grew at annual rate of 0.45% slightly higher than it did in 1780-1801 (0.41%). The estimations from 1830 onward are less revised and the common idea of a GDP growth rate higher than the period before1830 prevailed.

In a long run analysis the central issue is the loss of world leadership of Great Britain. This falling is relative to other main economies. This process clearly proceeds over almost one century. Referring to Bairoch's estimations[18] (1976) it could be hazardous to state a crisis in the middle 1800s if a growth in British per capita GDP of 1.21% per annum during 1830-1910 is considered. Anyway decomposing the period 1830-1910 and comparing British performances with other economies, particularly those of Germany and US, the downward trend in Great Britain accumulation process is appreciated. Following Bairoch (1976) again, it arises that in 1830-1860 per capita income grew in Great Britain of 1.54% per annum and in Germany of 1.19%. From 1860 till I World War British

economy grew hardly of 0.97% and the German one of 1.39%. It is clear the slowing down of Great Britain on one hand and the catching up of Germany on the other. The pace is actually valuable considering that in 1830 German per capita income was approximately 71% of British one, while in 1910 it reached more than 78%. The loss of world leadership of Great Britain is more evident comparing the British growth with the US one. Maddison estimations[19] (2002) suggest that US GDP in 1820 was 37.5% of British one, in 1850 it was 70.2%, in 1870 it was equal. A clear proof of British fall is provided by Crafts, Leybourne and Mills[20] (1991) who show that growth trend of industrial production, starting from middle 1850s till I World war, decreases[21].

We will provide a new proof of long run British fall estimating the trend of GDP growth rate. We will use here the compromise estimate of GDP by Feinstein[22] (1972) and we will apply to it the Hodrick-Prescott Filter(HP)[23]. Our results show a mild downward trend of British GDP growth rate over 1855-1913; only after 1899 it slows down dramatically. The growth of the structural component in 1899-1913 is lower than 1855-1899 of hardly half point percent per annum. In a recent work Solomou and Ristuccia[24] (2002) got similar findings. We will report here below a comparison between our estimates obtained through HP filter and the Solomou and Ristuccia ones applying Kalman Filter to the same series.

Table 1

In order to estimate the trend in GDP growth rate, the use of different methodologies does not substantially modify the findings. Both confirm the tendency of GDP growth rate to fall over time, suggesting that no structural break exists in the pace of British economy in

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1899-1913. Re-estimating the growth rate of industrial production index through the HP Filter, we get one more ingredient, useful to demonstrate the British fall.

Figure 2

Macroeconomic analysis points out a declining growth rate, from 1840 onward, due to a progressive decreasing of investments and to a remarkable reduction of public expenditure relative to national expenditure[25] and to a downward trend in labour productivity growth[26].

Table 2

In such a framework, the accumulated wealth in British economy looked tried to get a best location abroad. The pace of overseas investments was a natural outcome of the trend in economic growth and of the role of Great Britain in the world economic context. That is just the typical answer of capital to the trend fall of profit rate. When returns for different uses of capital decrease, capital moves where its own yields are higher, independently from its destination, being this Indian and American railways or exploitations of Latin American and African raw materials. Anyway, economic evaluation has to face with further elements. That's why is not possible to neglect that capital movement from Great Britain was influenced by the existence of protected colonial markets and by the working international monetary system.

Four elements seem to be significant to determine the flow of overseas investments: the relative fall of British economic leadership, differences between home and foreign returns, colonialism and international monetary system. Thereafter, the linkage with the

decreasing trend in growth rate of real GDP will be analyzed. For this purpose we will use the overseas investments estimations provided by Imlah, as indicated in section 3. Since that involves still a long run investigation, the series in real value will be filtered with the usual HP filter. As it showed in figure 3, an inverse correlation of the trend growth rate of overseas investments with trend growth rate of GDP is appreciated. This means that when Great Britain was on way to lose its role of world leader, a piece of national wealth tried to get best opportunities abroad.

Figure 3

To confirm our conjecture the versus of causal relationship will be tested using Granger Causality Test after selecting the appropriate number of lags to be introduced (See appendix 1 tables 2 and 3).

The results confirm that, in the considered period, the pace of GDP caused the overseas investments outflows. This finding, together with a simple correlation coefficient of two variables of -0.77, actually allows the consideration of the real GDP as a crucial element in the explanation of overseas investments, as stated by several push theorists, even if on other basis.

5 Bimetallism and gold Standard during colonial age.

Monetary events over nineteenth century can be summarized by the shift from bimetallism to gold based monometallic system. Formerly in 1816 Great Britain took on *de jure* Gold Standard and in 1820 established the gold convertibility of its currency. In the rest of Europe, for the most part, countries adopted bimetallic system; others, such as India, were settled on silver standard, other countries like US, were on bimetallism. In the

last quarter of the nineteenth century, the major European countries were converted into pure Gold Standard. Step by Step between 1873 and 1892, Germany, Scandinavian Countries, Holland, Austria-Hungary, Latin Union born in 1865 (France, Italy, Belgium and Switzerland) adopted Gold Standard and India and US in the last 1890s as well. A unified international payments system occurred. Generalized shift to Gold stimulated capital movements of major countries, mainly Great Britain. During the cotemporary presence of Silver and Gold standard British capital outflows were substantial as well.

Monetary stability was and still remains a key factor, since it defines an encouraging environment for capital flows. During bimetallic age the constancy of silver price relative to gold encouraged capital movements worldwide. International bimetallism satisfied a plenty of interests as it is clearly evident from De Cecco[27] (1979) who, referring to French case, notes that: *'la casa Rotschild, per bocca dei propri direttori, dichiarò il suo appoggio al doppio standard'*.

The stability of silver-gold ratio was encouraged by a cooperation between Bank of England and Banque de France by mean of joint measures, sometimes based on common accords, as during English banking crisis in 1836 and 1839 and during the French one in 1847, sometimes accidentally when gold mines were discovered in California (1849) and Australia (1851)[28].

Only when a decreasing in silver price occurred, bimetallism was dismissed. Two main events determined the falling in the relative price of silver in respect to Gold: discovering of new silver mines, and overall, adoption of Gold by Germany which was in its take-off phase. The associated effect of an increase in silver supply and of pressure on demand for gold caused a lowering in silver price and its dismissing by many countries as reserve bullion.

The pace of overseas investments is closely related to international monetary events. As it has been noted above, until 1873 Great Britain was on Gold Standard and other countries on bimetallic system. In this context the relative price of silver in respect to Gold did not vary, a part from slight fluctuations, the systems cooperated and overseas investments grew at a trend rate of 8% per annum. During monetary transition, from 1873 to 1892, Gold Standard was adopted by an increasing number of countries, except for India and US, the silver price lowered, the rise of nationalism smashed cooperation and a new form of protectionism prevailed in trade relationships; that's why overseas investments slowed down, growing just at 2.7% per annum. Finally in 1892-1913 Gold Standard is worldwide accepted, India and US converted to gold as well; that implied cooperation and closer relationships among countries and British capital outflows grew at 5.25% yearly.

Tightening our analysis to Indian experience, linkage between its monetary proceedings and British overseas investments is much closer because of colonial relationship. From monetary unification of India, occurred in 1835, the value of rupee remained unchanged: about 24 pence at least until silver price respect to gold was around 15:1. The rupee depreciation was an outcome of silver price falling, since India was on Silver standard. When this system was dismissed in 1892, a period of fluctuating exchange rates between rupee and pound took place till adoption of Gold Standard in the late of 1890s, which signed out a fixed exchange rate with one pound at 16 rupees. This level was maintained, as Goldsmith suggests, thanks to ' *the willingness, never expressed in statutory form, of the Government of India to buy or sell London (sterling) funds and, with some limitations, gold sovereigns or bullion at very close to the ratio of 15 rupees for pound sterling*'[29]. The stability of Indian currency was a device to aid English investments in that colony. Colonialism became more palpable in early 1890s, when Great Britain realized that goods produced in native land were going to give up on European and North-American markets

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because of US and Germany competition. Colonies were an useful outlet market for non competitive products of British industries. Just from 1892 onward the growth rate of British export raised for effect of colonialist dispositions (figure 4), guaranteeing the survival of British industry, despite of its technological relative decline.

Figure 4

The joint effect of increasing in exports and, overall, in overseas investments allowed Great Britain to go on in draining bullions so consolidating its role of exchanges world ruler; role covered during bimetallism as well.

The bullions draining pattern becomes clearer considering capital as a commodity. Accumulated monetary wealth in Great Britain, substantially potential capital, shifted abroad through overseas investments. Once in the destination economy, it changed in commodities, stocks, bonds or securities, and came back to Great Britain, mainly in the shape of bullions, increased in value. Likewise, British exports allow to get bullions which nourished the creation of domestic monetary capital.

These circuits were able to work by mean of international monetary stability; such a stability was warranted all nineteenth century long till I World War. Till silver-gold ratio remained unchanged, the two standards coexist, when an excess of demand of gold and silver overproduction caused the fall of relative price in disadvantage of silver, pure Gold Standard enforced. British overseas investments, as it has seen above, slowed down during the monetary transition period, 1873-1892, and they accelerated between 1893 and 1914 when Gold Standard became a worldwide accepted system, with addition of India and US.

Next section tries to draw bullions draining pattern from India that, in its turn, drained bullions from the rest of the World, as showed by its export surplus. It does not matter if this draining process involved silver, during gold-silver ratio stability, or gold, after the forced adoption of Gold Standard by India.

6 All That Glitters is Gold.

In the analysis of British foreign investments, monetary proceedings and colonialism, though apparently unrelated, appear as an *unicum.* Great Britain guaranteed for itself, it has seen in section 5, the selling in India of non competitive products for quality and price, trying to avoid, or at least, to limit the overproduction crisis viewed in section 4. So, that monetary stability was compulsory to India and other dominions. The *ratio* of this strategy is quite clear: India, having a surplus in balance of trade over 1870-1913, became a reserve of money (bullions). This money arrived in Great Britain by mean of British export incomes, ready to be reinvested abroad and at home as well. Stability of monetary system warranted in this way accumulation of these capitals which were pushed abroad as direct or portfolio investments[30].

The role of exports in creating internal liquidity and, we say potential capital, is confirmed by regression of A. G. Ford[31] who relates disposable liquidity (Y) to exports (X) and issue of money (M).

$$Y_t = 15.52 + 1.18\ X_t \tag{3}$$
$$R_c^2 = 0.60$$
$$Y_t = 5.77 + 1.56\ M_t \tag{4}$$
$$R_c^2 = 0.22$$

It is to be stressed that relationship between liquidity and exports is more consistent than that between liquidity and issued money; so money draining from abroad, through exports, was more relevant for creation of money.

Now there are all the elements to evaluate the pace of overseas investments in the considered period: trend growth rate of GDP, discussed in section 4, difference in foreign and home returns[32] and colonialism, which is narrowly tied to monetary happenings and, chiefly, to adoption of Gold Standard by India. This last element is picked up by Indian net export[33]. The results of regression analysis is reported below (for details see Appendix 1 table 4).

$$gr\_imlah = 0.25 - 11.76*gr\_gdp - 0.0068*dret + 0.62*gr\_iexp \qquad (5)$$

The outcomes show the simultaneous agreement of push and pull theories (the coefficients of growth rate of GDP and that of the differential of returns are both meaningful), though the first one seems to have a more important role to explain overseas investments. The main new result is the importance of monetary happenings, signally monetary stability, and colonialism captured by meaningfulness of Indian net export.

To summarize overseas investments depend on:

- inversely on Growth rate of GDP, confirming the existence of pushing capital abroad.
- directly on difference between home and foreign returns, sustaining soundness of attraction theories (pull).
- directly on monetary stability, interpreted by Indian net export, key factor to allow for bullions accumulation at home.

7 Conclusions

Overseas investments were certainly the macroeconomic factor that typified the period of British Empire fall from a qualitative point of view. Before determining their foundations, the major complexity is related to quantification of those outflows. Several difficulties are involved in that data mining; so the two main relevant approaches, indirect and direct,

encountered several questions. Anyway, though different logical starting points, the two methods are not substantially different in terms of quantitative results, as we demonstrated in section 3.

This step, basic from a methodological view, allows to undertake a rigorous analysis of the reasons of British overseas investments in the period before I World War. Starting from the state of art of the literature, unduly constrained to sharp-cut and alternate distinction between pull and push causes, new elements can be added to the theory. Though accepting differential between home and foreign returns as a obvious factor determining the pace of overseas investments, the first outcome of this work suggests that the long run falling of GDP growth rate is a key element as well. So the push and pull theories are not alternative.

The second relevant result raised from monetary events, mainly international monetary stability and the adoption of Gold Standard by India.

The peculiar status of India, on a surplus of trade balances, allows Great Britain to drain money, overall bullions, that solely when stable and sound could be attractive for British capital. By mean of Colonialism, Great Britain was able, on one hand, to influence critically Indian monetary policy, determining the transition to Gold Standard and its currency stability, and, on the other hand, to impose purchasing of British manufactures, no more competitive, paid earlier in silver and afterwards in gold. In this way money-commodity, potential capital, could to be transformed in productive capital abroad or at home and circulate again in the shape of money, so closing its natural cycle.

Despite of the obvious agreement of push and pull theories, the stability of money has to be added to carry out a complete analysis of the overseas investments. Such a stability warranted the realization of natural cycle of capital, tempering its own crisis at least till I World War.

Appendix 1

Table 1 –Wald test on Autoregressive Coefficients

$Imlah^a = C(1) + C(2)*AR(1)$
$Simon^b = C(3) + C(4)*AR(1)$

Null Hypotesis: C(2)=C(4)
Chi-squared 0.098998   p-value 0.753035

a: Logarithm of the overseas investments from Imlah (1958)
b: Logarithm of the overseas investments from Simon (1967)

Table 2 – VAR Lag Order Selection Criteria
Endogenous variables: gr_imlah [a] gr_gdp [b]

Lag	LogL	LR	FPE	AIC	SC	HQ
0	314.5907	NA	1.27E-08	-12.50363	-12.42715	-12.47451
1	445.8535	246.7740	7.84E-11	-17.59414	-17.36470	-17.50677
2	572.8609	228.6133	5.72E-13	-22.51444	-22.13203	-22.36881
3	634.1228	105.3704	5.81E-14	-24.80491	-24.26954	-24.60104
4	**647.6741**	**22.22414***	**3.98E-14***	**-25.18696***	**-24.49864***	**-24.92484***
5	649.6178	3.032226	4.35E-14	-25.10471	-24.26342	-24.78434
6	650.7493	1.674529	4.93E-14	-24.98997	-23.99572	-24.61135
7	655.5937	6.782148	4.83E-14	-25.02375	-23.87653	-24.58688
8	662.7558	9.454102	4.33E-14	-25.15023	-23.85006	-24.65512

a: Long period component of the growth rate of overseas investments applying HP Filter to Imlah (1958)
b: Long period component of the growth rate of Gdp applying HP Filter to Feinstein (1972)

Table 3 - Var Granger causality test.
Dependent variable: gr_imlah [a]

Exclude	Chi-sq	df	Prob.
gr_gdp	15.08447	4	0.0045
All	15.08447	4	0.0045

Dependent variable: gr_gdp [b]

Exclude	Chi-sq	df	Prob.
tc_imlah	4.766551	4	0.3121
All	4.766551	4	0.3121

a: Long period component of the growth rate of overseas investments applying HP Filter to Imlah (1958)
b: Long period component of the growth rate of Gdp applying HP Filter to Feinstein (1972)

Table 4 –Estimation of the reasons of Overseas Investments
Dependent Variable: gr_imlah [a]
Method: Two-Stage Least Square

Variable	Coefficient	Std. Error	t-Statistic	Prob.
gr_gdp [b]	-11.7599	2.799201	-4.201148	0.0002
dret [c]	0.006827	0.002713	2.51639	0.0166
gr_iexp [d]	0.616464	0.147489	4.179717	0.0002
C	0.250211	0.051766	4.833491	0.0000
Adjusted R-squared	0.868623		Durbin-Watson	1.187166

Instrument list: tc_imlah (-1), tc_gdp (-1), dret(-1), tc_iexp (-1).

a: Long period component of the growth rate of overseas investments applying HP Filter to Imlah (1958)

b: Long period component of the growth rate of Gdp applying HP Filter to Feinstein (1972)

c: Difference between total overseas and total home returns from Edelstein (1976) Appendix 3

d: Long period component of the growth rate of Indian net export applying HP Filter to *Statistical Abstract cit.*

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[21] They extract trend applying the Kalman Filter to Best Guess Estimate of Industrial Production Index of Crafts and Hurley.

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[23] The HP Filter was proposed by Hodrick e Prescott in 1980 (Postwar U. S. Business Cycle: An Empirical Investigation, Discussion paper No. 451, Carnegie-Mellon University). According to them a time series is to be considered as a sum of a long run structural component and of a cyclical short run component. The main hypothesis is that the long run component, representing trend growth, varies in the time for changing in demographics, technologies and capital stock. The cyclical component is to be interpreted as a deviation from long run growth path.

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[32] For data on differential of returns we used time series of Total Overseas minus Total Home, from Edelstein (1976), Appendix 3.

[33] For data on Indian net export see *Statistical abstract relating to British India* no. I, IV, XX, XXV, XXX, XXXIX, XLVIII, LV, Official Papers and Records Presented to Parliament, London. We construct the variable deflating for the Indian wholesales price index from Goldsmith R. W., *The financial Development cit.*, pag.5-6 table 1-3 column 5 and converting in pounds using the current official exchange rate rupee-pound.
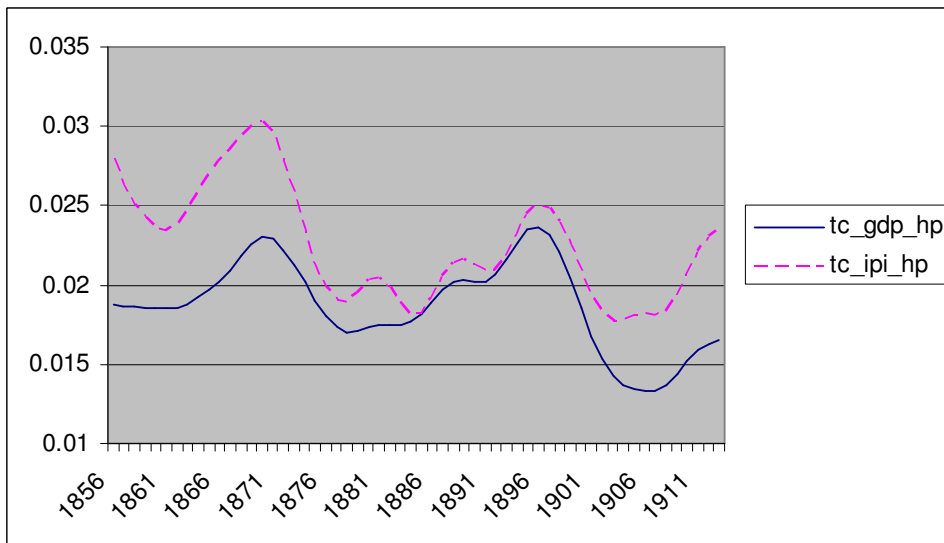
Figures and Tables

Figures

Figure 1 – Overseas Investments by Simon and Imlah
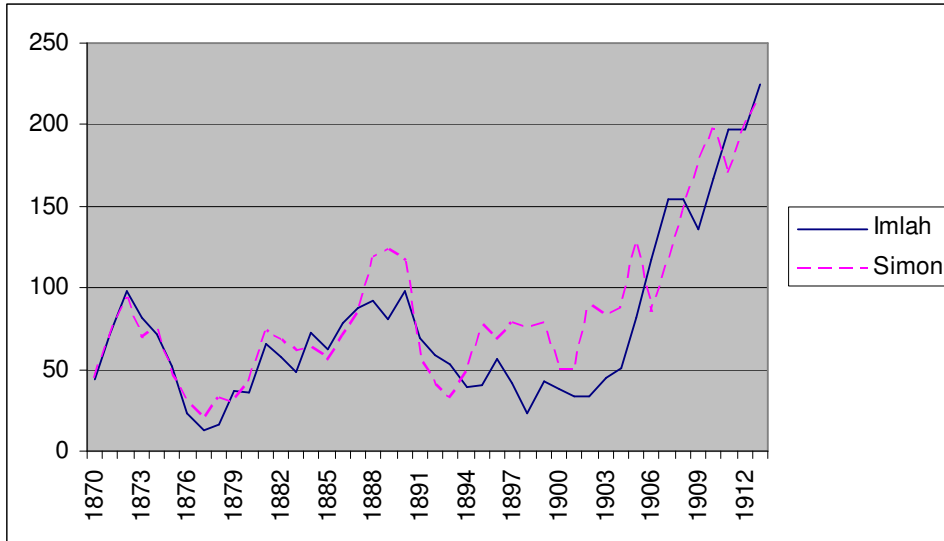
Source: Imlah (1958) e Simon (1976).
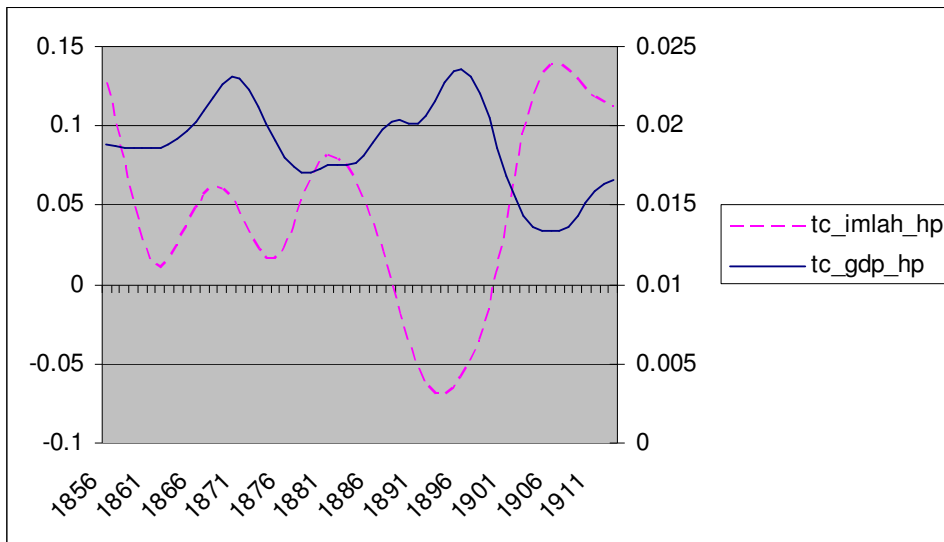
Figure 2 – Gdp and Industrial Production Index. Trend Growth Rates obtained using HPF

a. tc_gdp_hp: Long period component of the growth rate of Gdp applying HP Filter to Feinstein (1972)
b. tc_ipi_hp: Long period component of the growth rate of Ipi applying HP Filter to Crafts and Hurley (1993, TA3.1)

Source: Our elaboration on Feinstein (1972, T18) and Crafts and Hurley (1993, TA3.1)

Figure 3 – Gdp (right axes) and Overseas Investments (left axes). Trend Growth Rates obtained using HPF

a. tc_imlah_hp: Long period component of the growth rate of overseas investments applying HP Filter to Imlah (1958)
b. tc_gdp_hp: Long period component of the growth rate of Gdp applying HP Filter to Feinstein (1972)

Source: Our elaboration on Imlah (1958), Feinstein (1972, T18)

Figure 4 – British Export. Trend Growth Rates obtained using HPF
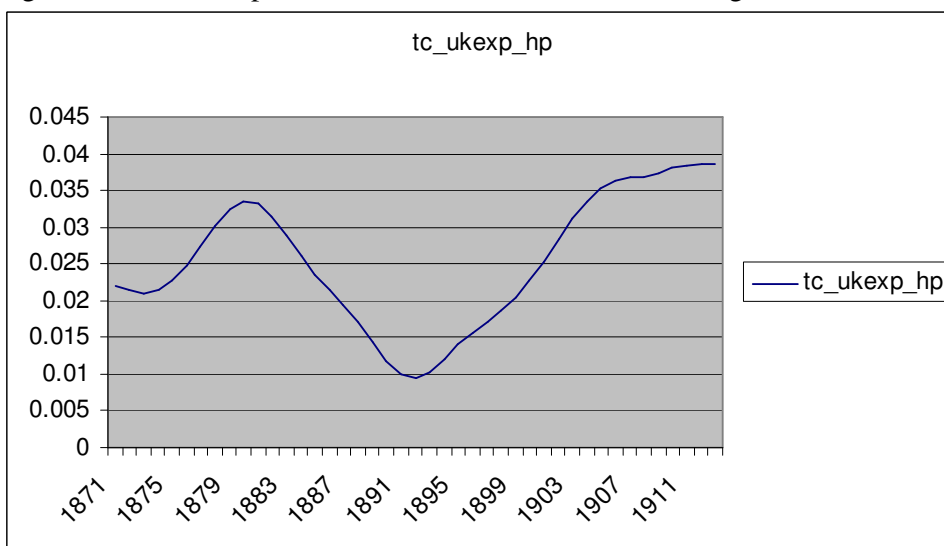
Source: Our elaboration on Feinstein (1972, T18)

Tables

Table 1 – Estimations of growth rate of GDP by Solomou-Ristuccia and our estimations (annual %)

years	Sol. & Ris. [a]	Ours[b]
1856-1864	-	1.87
1864-1876	2.2	2.08
1876-1887	1.57	1.78
1887-1899	2.63	2.14
1899-1910	0.97	1.54

a: Long period component of the growth rate of Gdp applying Kalman Filter to original data

b: Long period component of the growth rate of Gdp applying HP Filter to original data

Sources: Solomou, R. and Ristuccia C.A., *British episodic cit.* and our elaborations of Gdp compromise estimates by Feinstein (1972)

Table 2 –Economic Growth Key variables in Europe and Great Britain.

	1840		1870		1899		1910	
	GB	Eu norm	GB	Eu norm	GB	Eu norm	GB	Eu norm
Inv/natexp[a] %	10.5	14.4	8.5	17.2	7.3	18.6	7	19.5
Gov/natexp[b] %	7.9	7	4.8	6.3	5.9	5.9	8.2	5.7

a: Ratio of Domestic investments on National Expenditure.

b: Ratio of Governmental Expenditure on National Expenditure.

Source: Crafts (1985) T3.6, pag. 62-63.