DO FRONTIERS GIVE OR DO FRONTIERS TAKE? THE CASE OF INTERCONTINENTAL TRADE
IN FRANCE AT THE END OF THE ANCIEN RÉGIME[*]

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Abstract

This paper studies the role of the French intercontinental trading maritime frontier in domestic capital accumulation at the end of the *Ancien Régime*. It uses O'Brien's method to measure the amount of annual profits generated in this sector. The net gain is then computed by computing how much income and savings the resources invested in the intercontinental sector would have had if they had been invested in the French domestic economy. Finally, using the notion of "heart of growth", the paper suggests that this frontier was more important for its attractiveness for domestic capitalists than for the riches it distributed.

Introduction

The world has been the frontier of Europe. Or so it has seemed from the European viewpoint. The extension of trade and colonies gave a venture for some of the most adventurous Europeans. The sectors linked to this frontier were the most dynamic of their domestic economies. In the 18th century, trading cities on the French maritime frontier were an example of that. The trading activities of Nantes, Bordeaux, Marseilles and Rouen expanded much faster than the rest of the economy. The case of France was particular, as the usual trade analysis tools suggest that this maritime frontier was only an enclave of growth: its most dynamic activity merely used France as a warehouse between the West Indies and the rest of Europe. But what of the profits that were made in that trade?

Many authors asserted that the relations between European nations and the rest of the world played a great role in the "primitive accumulation" of capital before the Industrial Revolution. The best known of these authors are Marx[1] – even if the *Capital*'s chapter studying primitive accumulation only mentions European colonies –, Eric Williams[2] and, more recently the World System school researchers: Wallerstein, Frank, Amin, etc.[3]. Their statements are controversial. In particular, cliometricians have contested the importance of slave trade and plantation colonies for the English economy[4]. *In fine*, many economic historians would agree with Patrick O'Brien's view as it is expressed in his 1982 paper[5]: profits from the "periphery", that is more or less the non-european world, were simply too small to have played a major role in European growth.

To reach this conclusion, O'Brien computes the total British and European profits issued from relations with the periphery in the late 18th and early 19th century. We first transpose O'Brien's method to the case of France at the end of the *Ancien Régime*. We replace the term "periphery" by the term "intercontinental" and we offer an estimation of the amount of profits coming from the intercontinental sector. This sector is defined as including intercontinental trade of goods and services, shipping, insurance, production for intercontinental exports,

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[1] Marx, K. (1867 (1993)) (First book, section 7, chapter 24).
[2] Williams, E. W. (1944 (1966)).
[3] Cf. Amin, S. (1974) Frank, A. G. (1978); Wallerstein, I. (1974); Wallerstein, I. (1980); Wallerstein, I. (1989). This list is not complete. Cf. Crouzet, F. (1972) (p. 8) for Williams's predecessors.
[4] Cf. Sheridan, R. B. (1965); Sheridan, R. B. (1968); Thomas, R. P. (1968), Engerman, S. L. (1972), Coelho, P. R. P. (1973); Thomas, R. & R. Bean (1974); Richardson, D. (1975), Inikori, J. E. (1981); Darity, W. J. (1985); Solow, B. L. & S. L. Engerman (1987); Inikori, J. E. (1990); Eltis, D. & S. L. Engerman (2000).
[5] O'Brien, P. (1982). As an example of endorsment, cf. Bairoch, P. (1995) (pp. 117-120) However, O'Brien himself has come back on some of his affirmations in this article. He believes now that maritime trade and associated conflicts were central in 18th century economy.

profits from intercontinental investments. Computing profits is not enough, however: they have to be compared with the counter-factual of Europe using in its domestic economy the resources actually invested in the relations with the periphery. O'Brien's method to do that has been criticized by Barbara Solow[6]. We follow her recommendations in a second part Finally, we suggest an altogether different way to look at the importance of the intercontinental sector through the use of a growth theory concept: the notion of heart of growth. It might be that the attractive character for entrepreneurs of the frontier was actually more important than the profits it provided.

Measuring profits

Before comparing comes measuring. We present here our method to do so – more details are available in our thesis[7] – and our results.

Profits from intercontinental trade

The total profits accrued from intercontinental trade were equal to the rate of the profit offered by intercontinental trade times the amount of capital invested in intercontinental trade.

We have studied the rate of profits in intercontinental trade before[8]. We are obviously aware of how hazardous it is to suggest a precise number. Yet, after the study of 43 sources and 400 profit reports, we feel confident enough to take as the basis of our following estimates an annual rate of profit of 6.25% on a three-year rotation of capital, and thus a rate of profit of 20% on the whole rotation of capital.

To compute the amount of capital invested in intercontinental trade, we combine the data available on goods (including species) exports and on investment structure. The data available on investment structure allow us to compute the share of goods in investment. This share allows us to compute the total investment from the amount of goods exports.

We discuss export data in the fourth chapter of our thesis[9]. We explain there why we believe we can use Arnould's number as a fair snapshot of French trade at the end of the *Ancien Régime*[10]. That allows us to build the following table:

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[6] Solow, B. (1985).
[7] Daudin, G. (2001).
[8] Daudin, G. (2001) (pp. 407-546) ; Daudin, G. (2002a) ; Daudin, G. (2002b) ; Daudin, G. (forthcoming).
[9] Daudin, G. (2001) (pp. 320-406).
[10] Arnould, A. M. (1791) (table 1 and 2).

Table 1: Intercontinental French trade at the end of the *Ancien Régime*

	Iberian Empires	United States of America	West Indies	Africa (-) and Mascarene islands	Asia (-)	Near East and North Africa	Europe	Total
Imports (CIF)	0.0%	4.0%	31.3%	0.7%	5.7%	6.2%	0.0%	47.8%
Exports (FOB)	3.2%	2.1%	12.9%	3.7%	2.8%	3.4%	0.0%	28%
Re-exports (FOB) (only to Europe)	NA	NA	NA	NA	NA	NA	24.2%	24.2%
Total	3.2%	6.0%	44.2%	4.4%	8.5%	9.5%	24.2%	613,243,000 livres tournois

Hypothesis: 40% of French exports to Spain and Portugal were actually to their overseas empires[11]. The ratio of re-exports over exports is the same for the Near East and North Africa as it is for Europe. We have included species exports to Asia.

CIF: Cost, Insurance and Freight. CIF prices are prices in the destination harbour.

FOB: Free On Board. FOB prices are prices in the departure harbour.

All goods in that table are valued at their prices in France.

Let us now turn to the share of goods in investment. We can compute it thanks to the 125 18th century ship investment accounts (called "*mise-hors*" accounts) we know. These accounts come from a paper by Morineau and from various books by Dermigny, Meyer and Saugera[12]. As the following table shows, most data actually come from Meyer and the end of the *Ancien Régime*. Even though we have no reason to believe that investment structures changed a lot during the century, that means that the period we are looking at is especially well represented.

Table 2: Source and date of the investment accounts we use

Source	1729-1749	1757–1769	1770-1779	1780–1789	1790–1802	Total
Meyer		**18**	**28**	**54**	**4**	104
Dermigny				**17**		17
Saugera	**1**				**2**	3
Morineau	**1**					1
Total	2	18	28	71	6	125

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[11] O'Brien suggests that 60% of English exports to Spain were actually to the Spanish colonial empire: O'Brien, P. (1982) (p. 6). It is probable that the European Spanish market was more important for France than for England.

[12] Morineau, M. (1973); Dermigny, L. (1960) (tome 2); Meyer, J. (1969) and Saugera (1995) (pp. 240-242). More information of these data is available in my thesis.

The difference between shippers and traders was not clear-cut in France. All the investment accounts we have used included shipping and trading investment. This investment can be broken down in four categories: ship outfitting, victualling, wage advances and the cargo.

The following table gives the synthesis of the share of the cargo in the total investment:

Table 3: Synthesis of share of cargo in the shipping investment (by destination)

	West Indies and United States of America	Slave trade	India and China
Minimum	**5.8%**	**15.1%**	**43.7%**
Maximum	**64.2%**	**90.9%**	**79.3%**
Mean	**38.4%**	**59.4%**	**62.3%**
Median	**40.2%**	**63.9%**	**65.9%**
Confidence interval (95%)	**34.3%-42.6%**	**54.6%-64.1%**	**54.4%-70.3%**

Hypothesis: Commissions are mentioned by some accounts, but they are actually rather part of the remuneration of the outfitter's work than an investment: we have excluded them. We have aggregated miscellaneous costs – including stopover costs – with outfitting. We have included species as part of cargo.

We now have all the elements to compute the amount of profits coming from slave trade and direct trade with the Western Hemisphere, South and East Asia. The flow of exports in these trades was equal to 21.5% of the complete intercontinental trade: *i.e.* 132 million *livres tournois*.

By weighting the means of table 3 by the relative importance of each branch of trade – we treat all the trade with Africa like slave trade –, we find that exported goods formed 45% of the trade and shipping investment. The capital invested each year in the slave trade and direct trade with Africa, the Western Hemisphere, South and East Asia was hence equal to 225% (*i.e.* the inverse of 45%) of direct exports toward Africa, the Western Hemisphere, South and East Asia. Using the trade numbers already presented, we compute that this capital was equal to 297 million *livres tournois*.

The rate of profit on the full rotation of capital was equal to 20%. Admitting that investment did not change from one year to the next, the profits of ship outfitters and traders in slave trade and direct trade with Africa, the Western Hemisphere, South and East Asia were equal to 59 million *livres tournois*, or 45% of the direct exports.

The computation can be summed up as:

$$trade\ and\ shipping\ profits = \frac{profits}{investment} \times \frac{investment}{value\ of\ exported\ goods} \times value\ of\ exported\ goods$$

$$= \quad 20\% \quad \times \quad 225\% \quad \times \quad 132\ million$$

$$= 59\ million$$

Intercontinental trade also included trade with the Near East, re-exports to Europe and exports to the Iberian empires through their metropolises. Even if we supposed that the annual rate of profit was the same in these trades than in the ones we have just studied, it would not be possible to simply transpose our precedent computation, as the rotation length of the capital was different. Because capital rotation was shorter and because foreigners controlled part of that trade[13], we assume that profits in these trades were equal to 20% of the value of the goods exiting France instead of 45% for direct exports. The value of goods exiting France for these trades was equal to 189 million *livres tournois*. Hence the amount of associated profits was 38 million *livres tournois*.

Other aspects of intercontinental economic relations

O'Brien includes insurance profits in profits associated to relations with the periphery. We do the same. Let us first look the insurance of first section of trade travels, from France to another continent. We have some data on La Rochelle: they show that in peace time insurers got a profit equal to 45% of the insurance premiums paid to them. The mean of these insurance premiums was equal to 5.3% of the insured value of the shipping investment[14]. Traders did not insure fully their investment: studying Solier's accounts shows that the loss of a ship entailed a loss of 20% on the operation. We can deduct that only 80% of the investment was insured. Other sources confirm this "underinsurance" habit. We have computed before that the value of investment was 225% of the value of exported goods. Hence, the value insured was equal to 180% of the value of exported goods. If numbers from La Rochelle are any indication, premiums were equal to 9.5% of the value of exported goods. Insurers' profits on the first leg on each trade travel were thus equal to 4.25% of the value of exported goods, or 3.7 million *livres tournois* at the end of the *Ancien Régime*.

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[13] Cf. Daudin, G. (2001) (pp. 577-578).
[14] Clark, J. G. (1981) (p. 21).

The computation can be summed up as:

$$insurers'\,profits = \frac{insurers'\,profits}{premium} \times \frac{premium}{insured\,investment} \times \frac{insured\,investment}{total\,investment} \times \frac{total\,investment}{value\,of\,exported\,goods} \times value\,of\,exported\,goods$$
$$= \quad 45\% \quad \times \quad 5.3\% \quad \times \quad 80\% \quad \times \quad 225\% \quad \times \quad 132\,million$$
$$= 3.7\,million$$

For other types of trade, including other legs of direct trade with Africa, America, East and South Asia, we assume that French insurers' profits were equal to 1.4% of the goods flows: that represents 7 million *livres tournois*.

O'Brien includes three other forms of profits in his computation: income from capital invested directly in the periphery, profits on services sold to the periphery and profits on producing goods sold to the periphery. Data on French investments in the periphery are lacking. Let us assume that France had invested mainly in the West Indies: in opposition to what happened in England, profits from West Indies plantation were accrued to local producers rather than to absent owners[15]. Hence, both for lack of better estimate, and because choosing another hypothesis would strengthen rather than weaken our argument, we assume that profits from production in the West Indies stayed there and should not be included in French gains.

Similarly, we do not have data to study the sale of services to the periphery. In the case of France these services were probably to a large extend embedded in commercial activity between France and the periphery. In opposition to England, France did not control a large part of the country trade in South and East Asia. If that is true, the sale of services has already been taken into account in the preceding section: we will not add anything to it.

Finally, O'Brien suggests that the profits accrued to domestic producers on goods sold to the periphery were equal to 20% of their value. We will keep this number and apply it to all intercontinental exports. As a consequence, French producers made an annual profit of 34 million *livres tournois* on the exports of their goods.

We could still extend the definition of the profits indirectly linked intercontinental trade by adding those of French producers of services used in France by the intercontinental traders: to the insurance profits, we could add bankers, traders distributing imported goods in the domestic economy, traders gathering goods in harbour for exports, auctioneers and owners of warehouses… We have two reasons not to do it: the first one is while we do have some basis

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[15] Cf. Wallerstein, I. (1980) (pp. 167-171).

for the numbers we have proffered till now, we do not know of any source – either empiric study or past estimate – that would allow us to give a plausible estimate of the income of capital used in these activities[16]. The second reason is that we are trying to conduct a parallel estimation to O'Brien's one: we should set the same limits to it as he does.

Results

In the following table, we sum up three different computations: O'Brien's estimate for England in the late 1780s, our own estimate for France at the same time and, for the sake of comparison, the results our estimation method yields if it is applied to England.

Table 4: Profits from intercontinental economic relations in France and England at the end of the 1780s

(in million *livres tournois*)

	Our method applied to France	Our method applied to England	O'Brien's method applied to England
Total trade	**613**	**502**	**502**
Trade profits and commissions on trade and shipping	**97**	**78**	**67**
Profits on insurances	**11**	**9**	**8**
Profits from intercontinental trade brought back to the metropolises			**12**
Profits from the intercontinental sale of services			**20**
Profits from making or growing domestic goods exported to the periphery	**34**	**24**	**30**
Total	142	111	137

In applying our method to England, we have treated relations with the Near East and North Africa the same way as direct intercontinental trade. O'Brien's trade numbers exclude New England, whereas our numbers on French trade include it. As we are not comparing English and French results, this is of little importance. Total French trade with the U.S.A. was around 37 million *livres tournois*.

Our estimate of total direct and indirect French profit from intercontinental relations at the end of the *Ancien Régime* is 142 million *livres tournois* (approximately 5.7 million pounds sterling). Our method "transposed" to England gives comparable results to O'Brien's method. The fact that they are smaller is explained by the exclusion of some indirect profits that were less important for France than England. All these numbers can be seen only as giving orders

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[16] To some extent, the profit figure for domestic producers is itself uncertain. By choosing 20% we might have – like O'Brien and Thomas did – chosen a slightly high estimate. It is possible that it is high enough to actually include domestic service producer profits. However, contrariwise to goods production, domestic service production was also associated with imports.

of magnitude: there are too many uncertainties for any computations on the subject to give more.

Direct role of profits in the domestic economy

We are study the role of the intercontinental trade profits we have just computed in the domestic economy.

Capital stock in the domestic economy and in the intercontinental sector

We give in our thesis reasons to assume that French income was between 5 and 6 billion *livres tournois* in late *Ancien Régime*. We can also assume that 60% of domestic income went to labour, 25% to capital and 15% to land. If these numbers are accepted, total profits from intercontinental relations were between 9.5% and 11.5% of total capital income.

However, that does not mean that capital income would have been 10% smaller had the intercontinental sector not existed. We need to take into account the available alternative domestic uses of capital: we will do that by following Barbara Solow's recommendation. We first need to measure the amount of capital in the intercontinental sector and in the whole economy.

In the domestic economy

There are two methods to assess capital stocks. The first one is the perpetual inventory method: it proceeds from the estimation both of past investments and of past depreciation. It is the method used most of the time. Bourguignon and Lévy-Leboyer have used it to compute the stock of fixed capital in France in 1820[17]; Feinstein has used it to compute the stock of capital in Great Britain in 1760[18].

However, we are not going to use that method. First, it is only good to measure fixed capital: we believe that circulating capital was an important production factor in pre-industrial economies. Furthermore, this method would not use the information we have on capital income. Rather than measuring the gross "accounted for" capital on which capitalists receive income, the perpetual inventory method tries to measure the net productive stock of capital. Using this method in France at the end of the *Ancien Régime* would yield mean rate of capital

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[17] Bourguignon, F. & M. Levy-Leboyer (1985) (p. 276). The basis of the computation is to be found in: Lévy-Leboyer, M. (1976).
[18] Feinstein, C. H. & S. Pollard (1988) (p. 427).

remuneration of at least 7.7%[19]. This remuneration is higher that the one we have suggested in the intercontinental sector.

The alternative method to the perpetual inventory one is to compute capital stocks from capital income. It relies on future income expectations by capitalists[20]. It is the one we are going to use. If one accepts that the remuneration of domestic capital was 4.5%[21], then one can assess the capital stock used by the domestic economy at between 27 and 32 billion *livres tournois*[22].

In the intercontinental sector

We have made before the hypothesis that the annual remuneration of capital in intercontinental direct trade was 6.25%. If it is true, 97 million *livres tournois* were the income of 1,552 million *livres tournois*. Capital invested in insurances is more difficult to compute, as there was no immobilized capital as such. We are going to assume the same annual rate of profit. In that case, 11 million *livres tournois* were the income of a 175 million *livres tournois* investment. Finally, if one accepts that profit rate in the domestic economy was 4.5%, 34 million profits for producing exported goods were the income of a 755 million *livres tournois* investment. The sum of all the capital immobilised directly and indirectly by the intercontinental sector was hence 2.5 billion *livres tournois* at the end of the Ancien Régime.

The forgone income if there had not been any intercontinental trade

The measure of capital stocks is not enough to apply Solow's method. We also need to make additional hypothesis: we assume that the relation between outputs and inputs in the French economy could be represented by a Cobb-Douglas function. We discuss in our thesis why we estimate total labour income in intercontinental trade at two-thirds of total capital income. We also show why we believe that this remuneration was handed out to a number of workers included between 120,000 and 170,000.

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[19] Cf. Daudin, G. (2001) (pp. 622-623).

[20] Feinstein, C. H. (1978) (pp. 33-34) and Feinstein, C. H. (1965) (pp. 257-8).

[21] Farm rents seem to indicate that capita remuneration was between 3 and 4.5%. Cf. Velde, F. R. & D. R. Weir (1992, Risks and the International Differential): he quotes debates during the nationalization of church goods – the remuneration was then fixed at a number between 3 and 3.5% -- and different regional studies: Frêche, G. (1974, pp. 568-73); Poitrineau, A. (1965, pp. 513-514); Saint-Jacob, P. d. (1960, p. 293). Remuneration of capital in *rentes* was close to 5%. (cf. Postel-Vinay, G. (1997) and Hoffman, P. T., G. Postel-Vinay & J.-L. Rosenthal (2000)). We use an intermediate estimation of 4.5%.

[22] Here is the computation method in the case of the high hypothesis. The total French income was 6 billion. The domestic income was 5.76 billion. Capital remuneration in the domestic economy was 1.44 billion. That represented the remuneration of 32 billion *livres tournois* at 4.5%.

We can now measure the income that would have been forgone if the inputs used in the intercontinental sector had been transferred to the French domestic economy at the end of the *Ancien Régime*. The exact computation is presented in our thesis. Here are its results:

Table 5: Total income and factor income modification if the inputs used in the intercontinental sector were used in the domestic economy

		Absolute (million *livres tournois*)	Share of domestic income	Share of intercontinental income
Total product	**Low hypothesis**	**-81**	**-1.4%**	**-38.2%**
	High hypothesis	**-101**	**-2.0%**	**-47.9%**
Capital	**Low hypothesis**	**-103**	**-6.5%**	**-81.4%**
	High hypothesis	**-108**	**-8.1%**	**-85.5%**
Labour	**Low hypothesis**	**-1**	**0.0%**	**-1.2%**
	High hypothesis	**-13**	**-0.4%**	**-15.7%**
Land	**Low hypothesis**	**23**	**2.7%**	**NA**
	High hypothesis	**20**	**2.9%**	**NA**

The low hypothesis corresponds to a 6 billion *livres tournois* French economy and a intercontinental sector employing 170,000 workers. The high hypothesis corresponds to a 5 billion *livres tournois* French economy and a intercontinental sector employing 120,000 workers.

The existence of the intercontinental sector represented an additional income of between 1.5% and 2% for the French economy at the end of the *Ancien Régime*.

This gain was distributed in an uneven way among the different inputs: the existence of the intercontinental sector had a negative effect on land income. The old idea according to which trade prospered at the expense of domestic agriculture is confirmed. Yet, landowners' losses were more than compensated by capital owners' extra income. Capital income would have been reduced by a figure between 6.5% and 8% if the intercontinental sector had not existed. Capital owners were the largest beneficiaries of its existence.

The role of profits through investment and growth

The intercontinental sector was small compared to total French income. Yet, its existence had a redistributive role, mainly in the favour of capital. Through this redistributive role, it played a role in determining the saving rate and the capital accumulation rate. The authors we have quoted in introduction have argued that, as capital accumulation was at the centre of economic growth, the role of intercontinental trade in growth through savings might have been important.

The role in savings

To assess this role, we need to make additional hypothesises on what determines savings. We suppose that differences in saving rates between individuals were explained by differences in the origin of their income. We have two reasons to make that assumption.

The first reason is that the origin of incomes gives a proxy of its importance. Rich people save generally more than poor people. Labour income was the best distributed: it was hence probably the less saved. Capital income was the worst distributed: it was hence probably the more saved. Land income was in between: property was more scattered in France than in England. Part of the land income was accrued to poor people, even if a larger part was accrued to rich people. The share of land income that was saved must have been both smaller than the share of capital income that was saved and larger than the share of labour that was saved.

The second reason is that owners of different factors might behave differently even with the same income. A manufacture owner and a landowner might have the same income, coming respectively from capital or land. Yet, it is possible that the manufacture owner had a more "capitalist" behaviour, had a less ostentatious consumption and saved more than the large landowner.

We do not know any study on saving rates according to income origin. We can suggest a triplet of saving rates compatible with past English and French saving estimations[23].

Table 6: Hypotheses on the relations between saving rates and income origin

Production factor	Share of income (France)	Share of income (England)	Hypothesis on saving rates
Capital	25%	35%	20%
Land	15%	15%	5%
Labour	60%	50%	2%
Total	100%	100%	France: 6.95% England: 8.5%

If these figures are right, savings coming from the intercontinental sector were 30 million livres tournois a year. Of these, 28 million livres tournois were coming from capital income and 2 million livres tournois from labour income. Total yearly domestic savings were between 350 and 420 million livres tournois. Intercontinental savings were between 7% and 8.5% of domestic savings. To compute the saving gains arousing from the existence of the intercontinental sector, we have to take into account the alternative use of production factors. Using the figures presented supra, net gains were between 20 and 21 million livres tournois for capital income; savings from labour income were not affected; savings from land income were reduced by less than a million livres tournois. The whole net gain in yearly savings linked to the existence of the intercontinental sector was thus between 5% and 6.3% at the end of the Ancien Régime in France.

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[23] Cf. Daudin, G. (2001) (pp. 630-631).

From savings to growth

We can estimate the effect of these additional savings on French rate of growth by using our hypothesis on the French production function. We must first make an additional hypothesis on net capital accumulation and capital / output ratio. The basis of this additional hypothesis is a comparison between the situation in England[24] and in France during the 19th century[25]. That allows us to estimate that in late *Ancien Régime* France the net investment rate was between 2.4% and 3.9% and the net capital / output ratio was 2.5.

If these numbers are accepted, a one-point variation of the saving rates increased the capital stock growth rate by 0.4 point. A 0.4-point variation of the capital stock growth rate increased the total income growth rate by one tenth of a point. If one believes that French saving rate was 7% and French real growth rate *per capita* 0.6% at the end of the *Ancien Régime*, the elasticity of growth with regard to savings was 1.2. If the existence of the intercontinental sector increased global savings by a figure between 5 and 6.3%, it increased the growth rate of the economy by a figure between 6% and 7.6% (*i.e.* between 0.036 and 0.046 points).

Conclusion

We believe the numbers we have presented give a fair approximation of the role of intercontinental profits in late *Ancien Régime* France. The intercontinental sector was four times as important for growth as it was for total income: it was a dynamic sector that "pulled" the rest of the economy. Nonetheless, this direct role was relatively small. This is a usual result: most individual sectors seem small compared to the whole economy.

A possible indirect role for profits

Even if the profits figures were not as small as we have shown they were, the notion of an intercontinental sector "irrigating" the rest of the economy with its capital is in contradiction with the basic motivation of investment choices: profit. If the intercontinental sector offered higher profits rates than the domestic economy, why would the intercontinental traders (we will use the term as a short-hand for all the actors of intercontinental trade) have transferred their capital from this sector to other ones?

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[24] Feinstein, C. H. (1978); Crafts, N. F. R. (1985); Kuznets, S. (1974).
[25] Bourguignon, F. & M. Levy-Leboyer (1985) ; Toutain, J.-C. (1987).

A sector attracting capital rather than redistributing it

Limits in the movements of capital from the intercontinental sector

In France, as in Great-Britain, intercontinental traders were implied in industrial investment. In Scotland, tobacco traders played a role in mining, in the iron industry, in the linen sector and in the cotton sector[26]. In Nantes, especially before the Seven Years war, international traders and their capital were important in the textile industry, in glass making and in the indigo industry[27]. Nevertheless, there is no indication that intercontinental traders invested more in industry than other categories. In Scotland, their capital was only present in 17% of cotton firms[28]: that proportion might not have been very different from their share in total savings.

We can go further and suspect that intercontinental traders invested less in the domestic industry than other actors. In the case of Nantes, Pétré-Grenouilleau reminds us that after the "starting" period of industries, intercontinental traders had a tendency to get their capital back:

> « *All in all, two phases can be distinguished. The first one is contemporaneous with the birth of large colonial trade: the trading community tried then to create the industrial fabric that was to complement its own speculations (sugar factories and calicoes). The second phase starts very early, probably even before the mid-century. It is characterized by a clear withdrawal. This withdrawal became obvious just before the Revolution* ».[29] *(our translation)*

Boulle notices that, even before the Seven Years war, intercontinental traders did not invest outside Nantes. He remarks that "the range of investments from Nantes was limited" (our translation). He underlines that in Le Havre, capital was moving from industry to trade rather than the reverse around the mid-century[30]. Bairoch underlines as well that even when they invested into industry, traders did not offer their capital to the important sectors of the industrial revolution[31].

Intercontinental traders were simply behaving like most people: they would rather invest in

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[26] Devine, T. M. (1976).
[27] Boulle, P. H. (1972).
[28] Devine, T. M. (1976) (p. 10).
[29] Pétré-Grenouilleau, O. (1996, p. 82).
[30] Boulle, P. H. (1972) (p. 98); Boulle, P. H. (1975) (pp. 320-321).
[31] Bairoch, P. (1973) (pp. 547-9).

activities they knew and mastered than elsewhere. This did not exclude some asset diversification that included industrial investment. Yet, this diversification was directed toward geographically close industrial firms and firms in which there was a potential for vertical concentration allowing the utilisation of knowledge and social networks already accumulated in intercontinental trade.

Movements of capital and people to the intercontinental sector

The intercontinental sector did both keep its capital for itself and attract people from the interior economy. This attraction of people was also an attraction of capital: when someone moved into the intercontinental sector, he took his financial, human and social capital stocks with him.

We know the origins of 166 Nantes families involved in colonial trade in the second half of the 18th century[32]. The local bourgeoisie had been at the centre of the late 17th century expansion, but it did not represent more than 9.4% of the trading families in the second half of the 18th century. Most immigrants were traders from the interior economy. We know the profession of the father of 92 immigrants: 59 were coming from trading families. Migration from other French ports – like Bordeaux –, or from maritime Western France – that sent penniless nobles or families ascending the social ladder – was the exception rather than the norm.

In Marseilles, the number of *négociants* increased from 275 at the end of the 17th c. to 450 around 1750 and to 750 at the end of the *Ancien Régime*. *Négociants* from outside Marseilles were 18.7% of the total at the beginning of the century, 24.6% in the mid-century and 46.3% at the end of the *Ancien Régime*. The Solier – whose activity has been studied by Dermigny[33] – are a good example of the migrating movement[34]. As Carrière said: "The migration curve follows closely the expansion curve, and that is to be expected" (our translation).

In La Rochelle at the end of the *Ancien Régime*, only 58% of the ship outfitters came from the town or the adjoining regions: Aunis, Saintonge, Guyenne and Gascogne. In Lorient at the same time, 63% of the ship outfitters did not come from the town but from the neighbourhood dioceses – especially Vannes. In Bordeaux, "the majority of the ship outfitters were strangers to the region: either Languedoc protestants, Bretagne and Bayonne catholics or aliens like the

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[32] Pétré-Grenouilleau, O. (1996) (pp. 18-41).
[33] Dermigny, L. (1960).
[34] Carrière, C. (1973) (pp. 265 et suivantes).

Bethmann from Frankfort"[35]. That can be observed for earlier trade prosperities: in the 17th century, "the Saint-Malo capitalist centre was […] the heir of the Vitry centre"; « the Saint-Malo trading group was open […] it became larger throughout the 17th century by attracting dynamic elements from the cities and ports in its attraction zone »[36].

The importance of migration toward the trading centres is beyond dispute. Our educated guess on its motivation is the following: migration was an important stage in individual accumulation of financial, social and human capital. When the capital stock of domestic traders was such that they faced decreasing returns in local activities one can assume that they often also had enough knowledge and social connections to change the scale of their activity and continue their accumulation in the intercontinental sector.

Intercontinental sector: a plausible heart of growth?

What positive role could the intercontinental sector play in domestic growth if it attracted and kept for itself capital and entrepreneurs?

The "heart of growth" model

To answer that question, let us place ourselves in a neo-classic growth model[37]. *Per capita* economic growth, if there is no technical progress, arises only through capital accumulation. The society forgoes part of its present consumption in order to increase production, and consumption, in the future

Decreasing marginal returns to capital give this process a clear limit. Each new additional accumulated unit of capital increases future production by a smaller quantity than the ones that were accumulated before. The gains from capital accumulation are declining: as a result, the accumulation speed goes down. At some point, the gains of capital accumulation are equal to the cost of forgone consumption: growth stops as the economy reaches its long-term production level. To explain the continuation of growth beyond that point, it is necessary to introduce an exogenous phenomenon, for example technical progress. That is why these models are called "exogenous" growth models.

It is possible to build growth model that do not need exogenous phenomenon to explain sustained growth. Research in that direction has been important since the mid-1980s. The largest share of that research has been concerned with activities that have declining returns for

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[35] Cf, quoted by Pétré-Grenouilleau: Bouniol, D. (1972); Moutet, X. (1974); Butel, P. (1974) (p. 16).

[36] Lespagnol, A. (1997) (p. 88).

[37] Solow, R. (1956). On growth models in general, cf. Barro, R. J. (1995 (1996)).

private people and non-decreasing returns for the society, like research and development. "AK" models use an alternative approach[38]. They introduce in the economy a sector in which capital returns are constant. For this sector not to have increasing returns to scale, capital must be the only input it uses. Regardless of its size, this sector allows the economy to escape declining returns. That is why it is named a "heart of growth"[39]. Future production allowed by each new unit of capital does not decline, in so far as each unit of capital can be used in the heart of growth. In these conditions, it is possible for growth not to have any bounds. This is important in the long run. Furthermore, the rate of capital accumulation is constant: this is measurable in the middle run. The constant return to capital hypothesis does not need to hold to get this result: if the rate of return is declining it is enough that it stays always higher than in the domestic economy.

One guesses that we believe the intercontinental sector could have been playing the role of a heart of growth sector in late *Ancien Régime* France.

Why the ports were not enclave economies.

Even if one accepts that the intercontinental sector was a hearth of growth, it does not follow that it had a positive effect on the rest of the economy. Under certain circumstances, a hearth of growth might become autarchic, an enclave without any link with the rest of the economy. In a "heart of growth" model, capital has a tendency to accumulate in the heart of growth sector rather than in the rest of the economy. In the case of 18th century France, this risk was mitigated by the consumption habits of the members of the intercontinental sector: it seems that they were using a steady share of their income to consume domestic French products.

It is ironic that we should present that as a good thing. The consumption habits of French traders have often been criticised: among the authors that studied the relative industrial backwardness of France compared to England, many have exposed the lack of capitalist thriftiness of French bourgeoisies.

Hoselitz claimed for example that the aspiration to a *rentier* status was universal in French society[40]. The very word *rentier* corresponds more to the 19th century than to the 18th. Maybe it had an equivalent in the 18th century search for statute goods, like *offices* – some were

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[38] Romer, P. (1989).
[39] The « heart of growth » notion has been introduced by Rebelo, R. (1991). The Lucas model is another exemple of a heart of growth Lucas, R. E. (1988). For a general study, cf. Glachant, J. (1994) and Glachant, J. (1995).
[40] Cf., for exemple: Hoselitz, B. F. (1955) (p. 105). This perticular thesis « that broadly overestimates the importance of the State in the creation and the funding of industry » (Crouzet, F. (1966 (1992)), p. 341, note 2) is very discutable. The idea remains.

"ennobling" and all granted privileges – and land. Taylor and Léon exposed (among others) the taste for *offices* and land[41]. These goods attracted the wealth of intercontinental traders – as the wealth of other entrepreneurs – and extracted them, materially and culturally, from the advanced, "capitalist" sectors. Colbert and Necker already argued that *offices* attracted capital that could have been used in a more productive way – but how would they have replaced the income the state was receiving from *offices* sales?

Recent researches on individual ports – Bordeaux[42], Nantes[43] or Saint-Malo[44] – nuance this traditional vision. Pétré-Grenouilleau's synthesis does the same[45]. *Rentes*, land and *offices* were not the "grave" of trading riches: they should be treated as other consumption goods. It is after all to be expected that status goods were an aim of riches accumulation – either for oneself or for one's children. What would be the point of getting rich if you cannot enjoy your riches? This consumption taste was not exclusive to French trading communities. As Crouzet remarks, "[in England] the dream of every enriched trader was to become a *country gentleman*" (our translation)[46]. These consumption tastes neither undermined the viability of enrichment strategies nor were incompatible with the autonomy of merchant cultures.

In addition to these status goods, the largest share of remaining traders' consumption was coming from the French domestic economy: textiles, foodstuffs, furniture, domestic services, housing… Trading centres were linked to the French domestic economy by their consumption. They were supplied in priority by their hinterland (especially in low-value goods), but also by the rest of the country[47]. The link between the dynamic maritime cities and the domestic economy was never severed in the 18th century as it is now in some developing countries.

Conclusion

The aim of this paper was to contribute to the debate on the role of frontiers, and more particularly on the role of profits they offered in domestic capital accumulation. We have taken as an example the French intercontinental trade at the end of the *Ancien Régime*. We have used O'Brien's method to measure profits linked to the intercontinental trade, and we

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[41] Doyle, W. (1996) (p. 20) and Necker, J. (1784) (t.III, p. 149). Cf. also Taylor, G. V. (1967) (pp. 473-474, pp. 477-479, p. 485); Léon, P. (1970 (1993)) (pp. 632-634, p. 642).
[42] Butel, P. (1974) (pp. 325-364).
[43] Pétré-Grenouilleau, O. (1996) (pp. 126-127 and 128-129).
[44] Lespagnol, A. (1997) (pp. 735-772).
[45] Pétré-Grenouilleau, O. (1997) (pp. 96-101).
[46] Crouzet, F. (1966 (1992)) (pp. 339-343).
[47] Le Roux, T. (1996, pp. 152-153) gives maps of Nantes's supply areas.

have found that they amounted to 142 million *livres tournois*. Their direct role in the domestic capital accumulation could only have been limited, as the intercontinental sector was small compared to the whole economy: less than 7.5% of French growth can be explained by the capital accumulated in the intercontinental sector. We then suggested a change in perspective: instead of considering that the intercontinental sector supplied the rest of the economy with capital – an hypothesis difficult to defend either on theoretical and empirical ground – we think one should consider it as encouraging capital accumulation by offering a way out of declining returns for successful entrepreneurs. If our suggestion is right, frontiers might have been more important for the hopes and the dreams they generated than for the riches they distributed.

It was possible to measure the direct role of this particular frontier in the economy; we do not know yet of a method that would allow us to offer a measure its role through the inducement to capital accumulation. We simply offer this as an insight for future research.

Bibliography

AMIN, S., 1974: *Accumulation on a World Scale*.

ARNOULD, A. M., 1791: *De la balance du commerce et des relations commerciales extérieures de la France dans toutes les parties du globe particulièrement à la fin du règne de Louis XIV et au moment de la révolution*.

BAIROCH, P., 1973: "Commerce international de la révolution industrielle anglaise", *Annales E.S.C.*, p. 541-571.

BAIROCH, P., 1995: *Mythes et paradoxes de l'histoire économique*, La Découverte. 287 p.

BARRO, R. J., 1995 (1996): *La croissance économique*, Ediscience. xvii, 584 p.

BOULLE, P. H., 1972: "Slave Trade, Commercial Organization and the Industrial Growth in 18th century Nantes", *Revue française d'histoire d'Outre-Mer*, Vol. 59, n° 1, p. 70-112.

BOULLE, P. H., 1975: "Marchandises de traite et développement industriel dans la France et l'Angleterre du XVIIIe siècle", *Revue française d'histoire d'Outre-Mer*, Vol. 62, n° 226-227, p. 309-330.

BOUNIOL, D., 1972: *Etude sociale des armateurs Rochelais membres de la Chambre de Commerce dans la seconde moitié du XVIIIe siècle*, Nantes.

BOURGUIGNON, F., & M. LEVY-LEBOYER, 1985: *L'Economie Française au XIXe siècle*, Economica. iii, 362 p.

BUTEL, P., 1974: *Les négociants bordelais, l'Europe et les îles au XVIIIe siècle*, Aubier.

CARRIÈRE, C., 1973: *Négociants marseillais au XVIIIe siècle*, Institut historique de Provence, 1111 p.

CLARK, J. G., 1981: *La Rochelle and the Atlantic Economy During the 18th century*, 286 p.

COELHO, P. R. P., 1973: "The Profitability of Imperialism : The Britsh Experience in the West Indies, 1768-1772", *Explorations in Economic History*, Vol. X, n° 2, p. 253-280.

CRAFTS, N. F. R., 1985: *British Economic Growth during the Industrial Revolution*, Oxford Economic Press, 193 p.

CROUZET, F., 1966 (1992): "Angleterre et France au XVIIIe siècle : analyse comparée de deux croissances économiques", in M. Margairaz (Ed.), *Histoire Economique : XVIIIe-XXe siècles*, p. 323-353, Larousse.

CROUZET, F. (Ed.), 1972: *Capital Formation in the Industrial Revolution*.

DARITY, W. J., 1985: "The Number Game and the Profitability of the British Trade in Slaves"

Journal of Economic History, Vol. XLV, p. 693-703.

DAUDIN, G., 2001: Le *rôle du commerce dans la croissance : une réflexion à partir de la France du XVIIIe siècle*, Université Paris-I, Paris.

DAUDIN, G., 2002a: "Comment calculer les profits de la traite ?", *Outre-Mer : Revue d'Histoire*, n° 2e semestre, p. 43-62.

DAUDIN, G., 2002b: "The quality of slave trade investment in eighteenth century France", *Documents de travail OFCE*.

DAUDIN, G. forthcoming: "Profitability of slave and long distance trading in context: the case of 18th century France", *Journal of Economic History.*

DERMIGNY, L., 1960: *Cargaisons indiennes. Solier & Cie. 1781-1793*, S.E.V.P.E.N.

DEVINE, T. M., 1976: "The Colonial Trades and Industrial Investment in Scotland, c. 1700-1815", *Economic History Review*, Vol. 29, n° 1, p. 1-13.

DOYLE, W., 1996: *Venality: The Sale of Offices in Eighteenth-Century France*, Clarendon Press, xvii, 343 p.

ELTIS, D., & S. L. ENGERMAN, 2000: "The Importance of Slavery and the Slave Trade in Industrializing Britain", *Journal of Economic History*, Vol. 60, n° 1, p. 123-144.

ENGERMAN, S. L., 1972: "The Slave Trade and British Capital Formation in the Eighteenth Century : A comment on the William Thesis", *Buisness History Review*, Vol. 46, n° Winter.

FEINSTEIN, C. H., 1965: *Domestic Capital Formation in the United Kingdom*, Cambridge University Press, 259 p.

FEINSTEIN, C. H., 1978: "Capital Formation in Great-Britain". in P. Mathisas & M. M. Postan (Eds.), *Cambridge Economic History of Europe*, p. 28-96.

FEINSTEIN, C. H., & S. POLLARD (Eds.), 1988: *Studies in Capital Formation in the United Kingdom, 1750-1920*, Clarendon Press.

FRANK, A. G.,1978: *World Accumulation, 1492-1789*, Monthly Review Press, 303 p.

FRÊCHE, G.,1974: *Toulouse et la région Midi-Pyrénées au siècle des Lumières (vers 1670-1789)*, Cujas. 982 p.

GLACHANT, J., 1994: *Les théories de la croissance : fondements et implications*, Paris-I, Paris.

GLACHANT, J., 1995: "Croissance et structure du système productif dans une économie log-linéaire", *Annales d'économie et statistique*, Vol. 39, n° Juillet-septembre.

HOFFMAN, P. T., G. POSTEL-VINAY, & J.-L. ROSENTHAL, 2000: *Des marchés sans prix : Une économie politique du crédit à Paris, 1660-1870*, Editions de l'Ecole des Hautes Etudes en Sciences

Sociales. 446 p.

HOSELITZ, B. F., 1955: "Entrepreneurship and Capital Formation in France and Britain since 1700", in M. Abramovitz (Ed.), *Capital Formation and Economic Growth (Conference Proceeding, NY, 1953)*, p. 291-337. Princeton University Press / National Bureau of Economic Research.

INIKORI, J. E., 1981: "Market Structures and the Profits of the British African Trade in the Late Eighteennth Century", *Journal of Economic History*, Vol. 41, n° 4, p. 745-776.

INIKORI, J. E., 1990: "The Credit Needs of the African Trade and the Development of the Credit Economy in England", *Explorations in Economic History*, Vol. 27, n° 2, p. 197-231.

KUZNETS, S., 1974: *Population, Capital, and Growth: Selected Essays*, Heinemann Educational Books, 342 p.

LE ROUX, T., 1996: *Le commerce intérieur de la Frane à la fin du XVIIIe siècle : les contrastes économiques régionaux de l'espace français à travers les archives du Maximum*, Nathan, 315 p.

LÉON, P., 1970 (1993): "Les nouvelles élites". in Braudel & Labrousse (Eds.), *Histoire économique et sociale de la France*, p. 601-650, Puf.

LESPAGNOL, A., 1997: *Messieurs de Saint-Malo : Une élite négociante au temps de Louis XIV*, Presses Universitaires de Rennes, 494 p.

LÉVY-LEBOYER, M., 1976: "Les évaluations du capital français au XIXe siècle*", Pour une histoire de la statistique*, p. 393-416, Editions de l'INSEE.

LUCAS, R. E., 1988: "On the Mechanics of Economic Development", *Journal of Monetary Economics*, Vol. 22.

MARX, K., 1867 (1993): *Le Capital : Critique de l'économie politique*, (Vol. Livre premier), (Jean-Pierre Lefevre) PUF. li, 940 p.

MEYER, J., 1969: *L'armement nantais dans la deuxième moitié du XVIIIe siècle*, Sixième section de l'Ecole Pratique des Hautes Etudes/Centre de recherches historiques et SEVPEN, 468 p.

MORINEAU, M., 1973: "Quelques recherches relatives à la balance du commerce extérieur français au XVIIIe siècle : où cette fois un égal deux", in P. Léon (Ed.), *Aires et structures du commerce français au XVIIIe siècle*, p. 1-45.

MOUTET, X., 1974: *Négociants et armateurs de Lorient au XVIIIe siècle*, Nantes.

NECKER, J., 1784: *De l'administration des finances de la France*.

O'BRIEN, P., 1982: "European Economic Development : The Contribution of the Periphery", *Economic History Review*, n° February.

PÉTRÉ-GRENOUILLEAU, O., 1996: *L'argent de la traite : milieu négrier, capitalisme et*

développement: un modèle, Aubier, vii, 423 p.

PÉTRÉ-GRENOUILLEAU, O., 1997: *Les négoces maritimes français, XVIIe-XXe siècle*, Belin, 255 p.

POITRINEAU, A., 1965 : *La Vie rurale en Basse-Auvergne au XVIIIe siècle*, Puf.

POSTEL-VINAY, G., 1997: *La terre et l'argent : L'agriculture et le crédit en France du XVIIIe au début du XXe siècle*, Albin Michel.

REBELO, R., 1991: "Long-Run policy Analysis and Long-Run Growth", *Journal of Political Economy*, Vol. 99, n° 3.

RICHARDSON, D., 1975: "Profitability in the Bristol-Liverpool slave trade", *Revue française d'histoire d'Outre-Mer*, Vol. 62, n° 226-227, p. 301-308.

ROMER, P., 1989: "Increasing Returns and New developments in the Theory of Growth", in W. A. Barnett (Ed.), *Equilibrium theory and applications*, Cambridge University Press.

SAINT-JACOB, P. D., 1960: *Les Paysans de la Bourgogne du Nord au dernier siècle de l'Ancien Régime*, Les Belles Lettres.

SAUGERA, 1995: *Bordeaux, port négrier : chronologie, économie, sociologie*, XVIIe-XVIIIe, J. & D. Editions Karthala.

SHERIDAN, R. B. 1965. "The Wealth of Jamaica in the Eighteenth Century", *Economic History Review*, Vol. XVII.

SHERIDAN, R. B., 1968: "The Wealth of Jamaica in the Eighteenth Century : A Rejoinder", *Economic History Review*, Vol. XXI, p. 46-61.

SOLOW, B., 1985: "Caribbean Slavery and British Growth: the Eric Williams Hypothesis", *Journal of Development Economics*, Vol. 17, n° 1, p. 99-115.

SOLOW, B. L., & S. L. ENGERMAN (Eds.), 1987: *British Capitalism and Caribbean Slavery: The Legacy of Eric Williams,* Cambridge University Press.

SOLOW, R., 1956: "A contribution to the theory of economic growth". Quarterly Journal of Economics, Vol. 70, p. 65-94.

TAYLOR, G. V., 1967: "Noncapitalist Wealth and the Origin of the French Revolution", *American Historical Review*, Vol. 72, p. 469-496.

THOMAS, R., & R. BEAN, 1974: "The Fishers of Men : The Profits of the Slave Trade", Journal of Economic History, Vol. 34, n° 4, p. 885-914.

THOMAS, R. P., 1968: "The sugar colonies of the old empire: Profit or loss for Great Britain?", *Economic History Review*, Vol. 21.

TOUTAIN, J.-C., 1987: "Le produit intérieur brut de la France de 1789 à 1982, série AF n°15", *Economies et Sociétés, Cahiers de l'ISEA*, n°, p. 1-237.

VELDE, F. R., & D. R. WEIR, 1992: "The Financial Market and Government Debt Policy in France, 1746-1793", *Journal of Economic History*, Vol. 52, n° 1, p;1-39.

WALLERSTEIN, I., 1974: *The modern World system I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*, Academic Press. 410 p.

WALLERSTEIN, I., 1980: *The modern World system II : Mercantilism and the Consolidation of the European World Economy 1600-1750*, Academic Press.

WALLERSTEIN, I., 1989: *The modern World system III : The Second Era of Great Expansion of the Capitalist World*-Economy, 1730s-1840s, Academic Press.

WILLIAMS, E. W., 1944 (1966): *Capitalism and Slavery*, Capricorn.