

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

Guillaume Daudin¹
OFCE / Sciences Po

This paper studies the role of French intercontinental trade in the accumulation of domestic capital at the end of the *Ancien Régime*. It uses O'Brien's method to measure the amount of annual profits generated from this sector. The marginal profits are then computed by estimating what return the resources invested in the intercontinental sector would have had if they had been invested domestically instead. Finally, using the notion of "hearth of growth," the paper suggests that international trade was important for the French economy in spite of its modest aggregate returns.

¹ This paper is an offshoot from the sixth chapter of my thesis, now published as book: Guillaume Daudin, *Commerce et prospérité: la France au XVIII^e siècle* (Paris, 2005). The list of people that helped me writing it would make another paper. However, I have to mention and thank Nick Crafts, François Crouzet and Antoine d'Autume. This paper specifically benefited from the comments by participants to the *Table Ronde sur le Commerce Colonial* in Lorient, France in September 2001, to the 2002 all-UC conference in Economic History and to the 2005 EHS conference in Leicester.

The world has been the frontier of Europe. The extension of the frontiers for both trading and settlement increased the opportunities for adventurous Europeans. The sectors linked to these seemingly ever-expanding frontiers were the most dynamic parts of the various national economies. During the eighteenth century, the French port cities provided ample proof of that dynamism. The trading activities of Nantes, Bordeaux, Marseilles and Rouen expanded much faster than did the rest of the French economy. However, France was merely used as a warehouse to stock goods en route between the West Indies and the rest of Europe. Hence, the usual trade theory would suggest that French port-based maritime frontier was nothing more than an enclave of growth. But what of the profits that were made in this trade?

Many authors have asserted that the relations between European nations and the rest of the world played a decisive role in the “primitive accumulation” of capital during the centuries prior to the Industrial Revolution. The best known of these authors are Marx— even if the related chapter in *Das Kapital* makes only a passing mention of the European colonies – Eric Williams and, more recently, the World System School researchers such as Wallerstein, Frank, and Amin, to name but a few.² Their statements are controversial. In particular, cliometricians have contested the economic importance of slave trading and plantation colonies for the English economy.³ In fact, many economic historians would agree with Patrick O’Brien’s view, as it is expressed in a paper written in 1982, that profits from the

² Marx, Karl, *Le Capital : Critique de l'économie politique*. (Paris, 1867 (1993)); Williams, Eric Wilson, *Capitalism and Slavery* (New-York, 1944 (1966)). Amin, S., *Accumulation on a World Scale* (New-York, 1974) Frank, Andre Gunder, *World Accumulation, 1492-1789* (New-York and London, 1978); Wallerstein, Immanuel, *The modern World system I : Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century* (New-York, 1974); Wallerstein, Immanuel, *The modern World system II : Mercantilism and the Consolidation of the European World Economy 1600-1750* (New-York, 1980); Wallerstein, Immanuel, *The modern World system III : The Second Era of Great Expansion of the Capitalist World-Economy, 1730s-1840s* (San Diego, 1989). This list is not complete. Cf. Crouzet, François, ed. *Capital Formation in the Industrial Revolution* (London, 1972) (p. 8) for Williams’s predecessors.

³ Cf. Sheridan, R.B., "The Wealth of Jamaica in the Eighteenth Century", *Economic History Review*, XVII (1965); Sheridan, R.B., "The Wealth of Jamaica in the Eighteenth Century : A Rejoinder", *Economic History Review*, XXI (1968), 46-61; Thomas, Robert Paul, "The sugar colonies of the old empire : Profit or loss for Great Britain ?" *Economic History Review*, 21 (1968), Engerman, Stanley L., "The Slave Trade and British Capital Formation in the Eighteenth Century : A comment on the William Thesis", *Business History Review*, 46 (1972), Coelho, Philip R. P., "The Profitability of Imperialism : The British Experience in the West Indies, 1768-1772", *Explorations in Economic History*, X (1973), 253-280; Thomas, R., & Bean, R., "The Fishers of Men : The Profits of the Slave Trade", *Journal of Economic History*, 34 (1974), 885-914; Richardson, David, "Profitability in the Bristol-Liverpool slave trade", *Revue française d'histoire d'Outre-Mer*, 62 (1975), 301-308, Inikori, Joseph E., "Market Structures and the Profits of the British African Trade in the Late Eighteenth Century", *Journal of Economic History*, 41 (1981), 745-776; Darity, William Jr., "The Number Game and the Profitability of the British Trade in Slaves", *Journal of Economic History*, XLV (1985), 693-703; Solow, Barbara L., & Engerman, Stanley L., eds., *British Capitalism and Caribbean Slavery : The Legacy of Eric Williams* (New-York, 1987); Inikori, Joseph E., "The Credit Needs of the African Trade and the Development of the Credit Economy in England", *Explorations in Economic History*, 27 (1990), 197-231; Eltis, David, & Engerman, Stanley L., "The Importance of Slavery and the Slave Trade in Industrializing Britain", *Journal of Economic History*, 60 (2000), 123-144.

“periphery,” or, approximately, the non-European world, were simply too small to have played a major role in European growth.⁴

To reach this conclusion, O’Brien computes the total British and European profits derived from all economic activities outside Europe during the late eighteenth and early nineteenth centuries. The first part of this essay applies O’Brien’s method to the case of France at the end of the *Ancien Régime*. More precisely, it estimates the amount of profits coming from the “intercontinental sector”, defined as including the intercontinental trade of goods and services, shipping, insurance, production for intercontinental exports, as well as profits from intercontinental investments. In a second part, this essay compares the amount of profits coming from the intercontinental sector to the counter-factual situation in which the resources used in the periphery were instead invested in Europe’s domestic economy. O’Brien’s method of computing this potential investment in the domestic European economy has been criticized by Barbara Solow.⁵ This essay follows her recommendations. Finally, this essay suggests 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.” The appeal of the frontier for entrepreneurs was more important for the whole economy than the aggregate profits it provided.

1. Measuring profits

Before we compare, we need to measure. My method for measure is presented here – more details are to be found in Daudin (2005).⁶

1.1. Profits from intercontinental trade

The total profits generated by intercontinental trade were equal to the amount of capital invested in intercontinental trade multiplied by the rate of the profits.⁷ Suggesting a precise value for this rate of profit is very hazardous. Yet, after studying 43 sources and 400 profit reports, I feel confident enough to suggest that there was an annual rate of profit of 6.25%

⁴ O’Brien, Patrick, "European Economic Development: The Contribution of the Periphery", *Economic History Review* (1982). As an example of endorsement, cf. Bairoch, Paul, *Mythes et paradoxes de l'histoire économique* (Paris, 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.

⁵ Solow, Barbara, "Caribbean Slavery and British Growth: the Eric Williams Hypothesis", *Journal of Development Economics*, 17 (1985), 99-115.

⁶ Daudin, Guillaume, *Commerce et prospérité*.

⁷ *Ibid.* (pp. 241-360).

based on a three-year investment cycle, and, thus, a rate of profit of 20% during the entire 3 year cycle⁸.

To compute the amount of capital invested in intercontinental trade, we combine the available data regarding the export of goods (including specie) and the investment structure. The data available concerning the investment structure allow us to compute the share of goods in those investments. The product of the inverse of this share with the amount of exports is equal to the total amount of investment. In turn, this share allows us to compute the total amount of investment.⁹ We employ Arnould's estimate of French trade at the end of the *Ancien Régime*:¹⁰

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 specie 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

It is possible to compute the share of goods in investment thanks to the 125 ship investment accounts (called "*mise-hors*" accounts) from the eighteenth century. These accounts come from an article by Morineau and from various books by Dermigny, Meyer and Saugera.¹² As the following table shows, most of the data actually comes from Meyer and

⁸ Daudin, Guillaume, "Profitability of Slave and Long Distance Trading in Context: The Case of 18th Century France." *Journal of Economic History* 64, no. 1 (2004): (p. 144-171).

⁹ Ibid. (pp. 191-240).

¹⁰ Arnould, Ambroise Marie, *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* (Paris, 1791) (table 1 and 2).

¹¹ O'Brien suggests that 60% of English exports to Spain were actually to the Spanish colonial empire: O'Brien, "European Economic Development : The Contribution of the Periphery" (p. 6). It is probable that the European Spanish market was more important for France than for England.

¹² Morineau, Michel, "Quelques recherches relatives à la balance du commerce extérieur français au XVIII^e e siècle : où cette fois un égale deux", in P. Léon (ed.) *Aires et structures du commerce français au XVIII^e siècle* (Lyon, 1973), 1-45; Dermigny, Louis, *Cargaisons indiennes. Solier & Cie. 1781-1793* (Paris, 1960) (tome 2); Meyer, Jean, *L'armement nantais dans la deuxième moitié du XVIII^e siècle* (Paris, 1969) and Saugera, *Bordeaux, port négrier : chronologie, économie, sociologie, XVII^e-XVIII^e* (Biarritz, Paris, 1995) (pp. 240-242). More information of these data is available in Daudin, *Commerce et prospérité*.

deals with the end of the *Ancien Régime*. Therefore, our period of interest is especially well-represented.

Table 2: Source and date of the investment accounts

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

The difference between outfitters and traders was not clear-cut in France: all investment accounts included both investment in shipping and investment in trading. Total investment can be broken down in four categories: ship outfitting, buying victuals, wage advances and the cargo.

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

Table 3: The share of the cargo as in total 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%

Commissions are mentioned in some accounts, but they are actually part of the outfitter's remuneration rather than an investment, so are excluded. Miscellaneous costs – including stopover costs – are aggregated under the broad category of “outfitting.” Species are considered to be part of cargo.

We now have all the elements in place to compute the amount of profits coming from both the slave trade and the direct trade with the Western Hemisphere, South and East Asia. These trades amounted to 21.5% of the total intercontinental trade: *i.e.* 132 million *livres tournois*.

Applying table 3 on trade numbers — assuming slave trade stands for all that all trade with Africa — one finds that exported goods constituted 45% of the total investment in trade and shipping. The capital invested each year in the slave trade and in the direct trade with Africa, the Western Hemisphere, and with South and East Asia was, therefore, equal to 225% (*i.e.* the inverse of 45%) of direct exports to Africa, the Western Hemisphere, and South and East Asia. Using the trade numbers already presented, we compute that this invested capital was equal to 297 million *livres tournois*.

The rate of profit from the full investment cycle was equal to 20%. Assuming that investment did not change from one year to the next, the profits of the outfitters and traders were equal to 59 million *livres tournois*, or 45% of the direct exports. The computation can be summed up as:

Erreur ! Des objets ne peuvent pas être créés à partir des codes de champs de mise en forme.

Intercontinental trade also included trade with the Near East, re-exports to Europe and exports to the Iberian empires through their home countries capital cities. Even if we suppose that the annual rate of profit was the same in these trades as in the ones we have just examined, it would still not be possible to simply transpose our previous computation for two reasons. First, the investment cycle was shorter. Second, non-French controlled part of that trade. For these reasons, 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.¹³ The value of goods exported from France in these trades was equal to 189 million *livres tournois*. Hence profits amounted to 38 million *livres tournois*.

1.2. Other aspects of the intercontinental economic relations

O'Brien includes insurance profits in the profits derived from the periphery. There are data on the insurance of the first part of a trading voyage, i.e. from France to another continent. In La Rochelle, in peacetime, insurers were able to make a profit equal to 45% of the insurance premiums paid to them. The average premium amounted to 5.3% of the insured value.¹⁴ However, traders usually did not insure their investment fully. The study of Solier's accounts reveals that ship losses entailed a loss of 20% on the operation: it follows that only 80% of the investment was insured. Other sources confirm this practice of "underinsuring." As was mentioned above, the value of the investment was 225% of the value of the exported goods. Hence, the value insured was equal to 180% of the value of exported goods. If the numbers from La Rochelle are an indication, premiums were equal to 9.5% of the value of the exported goods. Insurers' profits on the first leg on each trade trip were, thus, equal to 4.25% of the value of the exported goods, or 3.7 million *livres tournois* at the end of the *Ancien Régime*. The computation can be summed up as follows:

¹³ Daudin, *Commerce et prospérité* (pp. 374-375).

¹⁴ Clark, John G., *La Rochelle and the Atlantic Economy During the 18th century* (Baltimore, 1981) (p. 21).

$$\begin{aligned}
\text{insurers' profits} &= \frac{\text{insurers' profits}}{\text{premium}} \times \frac{\text{premium}}{\text{insured investment}} \times \frac{\text{insured investment}}{\text{total investment}} \times \frac{\text{total investment}}{\text{value of exported goods}} \times \text{value of exported goods} \\
&= 45\% \times 5.3\% \times 80\% \times 225\% \times 132 \text{ million} \\
&= 3.7 \text{ million}
\end{aligned}$$

For other types of intercontinental trade, we assume that the profits of the insurers in France amounted to 1.4% of the total amount of goods, equalling 7 million *livres tournois*.

O'Brien includes three other forms of profits in his computation: income from capital invested directly in the periphery, profits made by providing services sold to the periphery, and profits made by producing goods sold to the periphery. Unfortunately, data on French investments in the periphery are lacking. It seems that France had invested mainly in the West Indies. Unlike the English experience, profits from the West Indian plantations usually benefited local planters rather than absentee owners.¹⁵ As we have no reliable estimates, and because choosing another hypothesis would strengthen rather than weaken our argument, we assume that profits from production in the West Indies stayed on the islands themselves, and should not be included in the total French gains from its activities overseas.

Similarly, there are no direct data to study the sale of services to the periphery. Unlike England, France did not control a large part of intra-Asian trade between countries in South and East Asia. More generally, services were probably, to a large extent, embedded in the commercial activity between France and the periphery. That means that the sale of services has already been taken into account in the preceding section: they do not need to be added again.

Finally, O'Brien suggests that the profits accrued to domestic producers on goods sold to the periphery were equal to 20% of their value. The same percentage can be applied to all intercontinental French exports. As a consequence, French producers made an annual profit of 34 million *livres tournois* on the exports of their goods.

The amount of profits from the periphery could be increased still further by including the profits garnered by the (French) suppliers of services used in France by the intercontinental traders. That would mean adding the profits made by bankers and by traders distributing imported goods in the domestic economy, the traders bringing goods to the harbours to be exported to other continents, the auctioneers and owners of warehouses, and so on... There are two reasons why this is to be avoided. First, there are no information whatsoever available to provide a plausible indication of the income derived from the capital invested in these

¹⁵ Wallerstein, *World system II* (pp. 167-171).

activities.¹⁶ Second, the final estimate must be comparable to O’Brien’s: the same limits on the inclusion of domestic activities in our calculations should be set than he as he does in his calculations.

1.3. Results

Three different calculations are summed up in the following table: 1) O’Brien’s estimate for England in the late 1780s; 2) this article’s estimate for France for the same period; and 3) for the sake of comparison, the results this article’s method would yield if it were applied to England.

Table 3: 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 “colonial” production 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	105 (137)

In applying my method to England, I 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 difference is of little importance. Total French trade with the U.S.A. amounted to around 37 million *livres tournois*.

Our estimate of the total direct and indirect French profits from intercontinental trade at the end of the *Ancien Régime* is 142 million *livres tournois* (approximately 5.7 million pounds sterling). In view of the many uncertainties factors, this number should be seen as providing an order of magnitude only.

Our method “transposed” to England gives comparable results to those arrived at by employing O’Brien’s method. The fact that O’Brien’s numbers are lower can be explained by the exclusion of some indirect profits that were less important for France than they were for England.

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.

2. Direct role of profits in the domestic economy

2.1. Capital stock in the domestic economy and in the intercontinental sector

This raw amount of profits must be compared with the characteristics of the French economy. French national income was between 5 and 6 billion *livres tournois* in late *Ancien Régime*. If one assumes that 60% of the domestic income went to labour, 25% to capital and 15% to land¹⁷, total profits from intercontinental relations were between 9.5% and 11.5% of total income from investment.

However, that does not mean that income from invested capital would have been 10% smaller had the intercontinental sector not existed. One needs to take into account the available alternative domestic uses of capital, following the recommendations of Barbara Solow. To do that, this article first measures the amount of capital in the intercontinental sector, as well as in the economy as a whole.

2.1.1. The amount of capital invested in the domestic economy

There are two methods for assessing total investments. The first method is the perpetual inventory method. It is based on estimates of past investments and of past depreciation, and is the method employed most frequently by historians. Bourguignon and Lévy-Leboyer have used it to compute the amount of fixed capital in France in 1820.¹⁸ Feinstein has also used it to compute the amount of capital in Great Britain in 1760.¹⁹

However, this method presents two difficulties. First, it only provides an estimate of the amount of fixed capital, while it is probable that circulating capital was also an important production factor in the pre-industrial economies. Furthermore, this method gives no room for the information available on the income derived by investments. Rather than measuring the gross “accounted for” capital on which capitalists received income, the perpetual inventory method tries to measure the net productive stock of capital. Applying this method to France at the end of the *Ancien Régime* would yield an average profit rate of at least 7.7%.²⁰ This profit

¹⁷ See Daudin, *Commerce et prospérité* (pp. 397-402)

¹⁸ Bourguignon, François, & Lévy-Leboyer, Maurice, *L'Économie Française au XIX^e siècle* (Paris, 1985) (p. 276). The basis of the computation is to be found in: Lévy-Leboyer, M., "Les évaluations du capital français au XIX^e siècle" *Pour une histoire de la statistique* (Paris, 1976), (p. 393-416).

¹⁹ Feinstein, Charles H., & Pollard, Sidney, eds., *Studies in Capital Formation in the United Kingdom, 1750-1920* (Oxford, 1988) (p. 427).

²⁰ Cf. Daudin, *Commerce et prospérité* (pp. 402-403).

rate is much higher than the profit rate in the intercontinental sector: that result is not plausible.

The alternative perpetual inventory method computes the total amount of capital from the income derived from it. It relies on the future income expectations of the owners of capital.²¹ Assuming that the rate of return on domestic capital was 4.5%,²² the total amount of capital invested in the domestic French economy can be computed at between 27 and 32 billion *livres tournois*.²³

2.1.2. The amount of capital invested in the intercontinental sector

Assuming that the return on capital invested in international trade came to 6.25%, 97 million *livres tournois* must have been the income derived from an investment of 1,552 million *livres tournois*. Capital invested in insurances is more difficult to compute. However, assuming the same profit rate, 11 million *livres tournois* was the income derived from an investment of 175 million *livres tournois*. Finally, assuming that the profit rate in the domestic economy was 4.5%, 34 million was the profit derived from producing exported goods. Thus, the grand total of all capital invested directly and indirectly in the intercontinental sector amounted to 2.5 billion *livres tournois* at the end of the *Ancien Régime*.

2.2. If there had not been any intercontinental trade . . .

Measuring the total amount of capital does not suffice to compute the amount of forgone income. One also needs to make additional hypotheses on the domestic economy. This article assumes that the relationship between outputs and inputs in the French economy could be represented by a Cobb-Douglas function.

²¹ Feinstein, Charles H., "Capital Formation in Great-Britain", in P. Mathias & M. M. Postan (eds.), *Cambridge Economic History of Europe* (Cambridge, 1978), 28-96 (pp. 33-34) and Feinstein, Charles H., *Domestic Capital Formation in the United Kingdom* (Cambridge, 1965) (pp. 257-258).

²² Farm rents seem to indicate that capita remuneration was between 3 and 4.5%. Cf. Velde, François R., & Weir, David R., "The Financial Market and Government Debt Policy in France, 1746-1793", *Journal of Economic History*, 52 (1992), 1-39: 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, Georges, *Toulouse et la région Midi-Pyrénées au siècle des Lumières (vers 1670-1789)* (Paris, 1974); Poitrineau, A., *La Vie rurale en Basse-Auvergne au XVIII^e siècle* (Paris, 1965); Saint-Jacob, P. de, *Les Paysans de la Bourgogne du Nord au dernier siècle de l'Ancien Régime* (Paris, 1960). Remuneration of capital in *rentes* was close to 5%. (cf. Postel-Vinay, Gilles, *La terre et l'argent : L'agriculture et le crédit en France du XVIII^e au début du XX^e siècle* (Paris, 1997) and Hoffman, Philip T., Postel-Vinay, Gilles, & Rosenthal, Jean-Laurent, *Des marchés sans prix : Une économie politique du crédit à Paris, 1660-1870* (Paris, 2000)). We use an intermediate estimation of 4.5%.

²³ 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%.

The income from labour in intercontinental trade can be estimated to be about two-thirds of the income derived from investments and the total number of labourers involved in intercontinental economic activities to be between 120,000 and 170,000²⁴.

All these hypotheses allow to compute two sets of numbers:

- The relative size of the intercontinental sector, broken down in capital and labour income
- The relative income that would have been lost if the inputs used in the intercontinental sector had been transferred to the French domestic economy at the end of the *Ancien Régime*.

Table 4: Static role of the intercontinental sector

	Total French income	Capital income	Land income	Labour income	Total British Income
Relative size of the intercontinental sector	4% – 4.75% of GNP 9.5% – 15% of industrial product	13% – 15.5%	0%	2.5% – 3%	7% – 8% of GN 23% – 26% of industrial produ
Lost income if the sector had not existed	1.5% – 2%	6.5% – 8%	-3% – -2.5%	0% – 0.5%	

The intercontinental sector provided between 1.5% and 2% of additional income to the French economy at the end of the *Ancien Régime*.

This gain was distributed in an uneven way among the different inputs. First of all, the existence of an intercontinental sector had a negative effect on income derived from land, confirming the old assumption that trade prospered at the expense of domestic agriculture. However, the losses incurred by the landowners were more than compensated for the total economy by the extra income gained by the owners of capital. Income derived from investment would have been reduced by 6.5% to 8% if the intercontinental sector had not existed. Capital owners were the largest beneficiaries of the intercontinental sector.

2.3. The role of profits through investment and growth

The intercontinental sector was small compared to the total French economy. Yet its existence had a redistributive role, mainly in favour of capital. Through this redistributive role, the intercontinental sector played a role in determining the rate at which capital was saved and invested. According to the authors cited in the introduction, the accumulation of capital was at the centre of economic growth, and, therefore, the role of intercontinental trade in economic growth through savings might have been important.

²⁴ Daudin, *Commerce et prospérité* (pp. 378-388).

2.3.1. The role of intercontinental profits in French savings

The determinants of savings are central to the assessment of the role of French intercontinental profits in savings. One acceptable approximation is that differences in rates of saving between individuals can be explained by differences in the origin of their income.

There are two reasons to make that assumption.

The first reason is that the origin of incomes gives a proxy of its repartition. This is important because rich people generally save more than poor people. Income from labour was distributed most equally and, therefore, less was saved. Income from capital was distributed most unevenly and, hence, more of it was saved. Income from land ownership was in between: distributed more evenly in France than in England, some of it accrued to poor people, but a much larger percentage benefited the rich.

The second reason for assuming that the origin of the income determines the rate of saving is that it might play a role in the behaviour of income earners with a similar income. A manufacturer and a landowner might have had the same income, but the manufacturer might be expected to exhibit more “capitalist” behaviour and consume less ostentatiously and, thereby, save more than the landowner.

Three saving rates compatible with estimates of past savings rates in England and France are suggested in the next table.²⁵

Table 5: Hypotheses on the relations between savings rates and the origin of income

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%

According to these figures, the savings coming from the intercontinental sector amounted to 30 million *livres tournois* a year. Of these 30 million, 28 million *livres tournois* were income derived from capital income and 2 million *livres tournois* from labour. The total yearly domestic savings amounted to between 350 and 420 million *livres tournois*.

Intercontinental savings ranged from 7% to 8.5% of domestic savings. Taking into account the alternative use of production capacities, net gains were between 20 and 21 million *livres tournois* for capital income. Savings from labour income were not affected, while savings from land income were reduced by less than a million *livres tournois*. The whole net gain in

²⁵ For more details, see Daudin, *Commerce et prospérité* (pp. 413-416).

yearly savings linked to the existence of an intercontinental sector thus ranged between 5% and 6.3% at the end of the *Ancien Régime* in France.

2.3.2. From savings to growth

The effect of these additional savings on the French rate of growth can be computed by using our hypothesis on the French production capabilities. However, an additional hypothesis must first be made concerning the net capital accumulation and the capital/output ratio. The basis of this additional hypothesis is a comparison between the situation in England and France during the nineteenth century.²⁶ This comparison indicates 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 in the saving rates increased the capital stock growth rate by 0.4 point. A 0.4-point variation in the rate of growth of the amount of capital in the economy increased the total income growth rate by one tenth of a point. Assuming that the gross French saving rate was 7% and that French real growth rate *per capita* was 0.6% at the end of the *Ancien Régime*, the elasticity of growth with regard to savings was 1.2. Thus, if the existence of the intercontinental sector increased savings by 5 to 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). If the size of this effect was constant from 1715 to 1790, the intercontinental sector increased GNP per capita in 1790 by 2 to 3%. This is higher than its static role, but still small.

3. A possible indirect role for profits

These numbers 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 not surprising. Most individual sectors seem small when compared with the overall economy.

Actually, even if the profit figures were not as small as this paper suggests, the notion of an intercontinental sector “irrigating” the rest of the economy with its capital contradicts the

²⁶ Feinstein, "Capital Formation in Great-Britain"; Crafts, N.F.R., *British Economic Growth during the Industrial Revolution* (Oxford, 1985); Kuznets, Simon, *Population, Capital, and Growth: Selected Essays* (London, 1974). Bourguignon, & Levy-Leboyer, *L'Economie Française au XIXe siècle*; Toutain, Jean-Claude, "Le produit intérieur brut de la France de 1789 à 1982, série AF n°15", *Economies et Sociétés, Cahiers de l'ISEA* (1987), 1-237.

basic motivation for making investment decisions -- profit. If the intercontinental sector offered higher profits than the domestic economy, why would the intercontinental traders (we will use the term as a short-hand for all the actors in intercontinental trade) have transferred their capital from this sector to other ones?

3.1.A sector attracting capital rather than redistributing it

3.1.1. Limits in the movements of capital from the intercontinental sector

In France, as in Great-Britain, intercontinental traders were involved in industrial investment. In Scotland, tobacco traders played a role in mining, the iron industry, linen production, and in the cotton sector.²⁷ 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.²⁸ Nevertheless, there is no indication that intercontinental traders invested more in industry than other categories. In Scotland, their capital was only invested in 17% of cotton firms.²⁹ This proportion of investment, in fact, might not have been very different from their share in total savings.

One can surmise that intercontinental traders invested less in domestic industries than did other actors. In the case of Nantes, Pétré-Grenouilleau reminds us that after the “starting” period of industries, intercontinental traders had a tendency to withdraw their capital.

« 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 calicos). 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 ».³⁰ (my translation)

Boulle notes that, even before the Seven Years War, intercontinental traders did not invest outside of Nantes. He remarks that “the range of investments from Nantes was limited.” He underlines that, around the mid-century in Le Havre, capital was moving from industry to trade rather than the reverse.³¹ Bairoch, too, points out that, even when traders

²⁷ Devine, T. M., "The Colonial Trades and Industrial Investment in Scotland, c. 1700-1815", *Economic History Review*, 29 (1976), 1-13.

²⁸ Boulle, Pierre H., "Slave Trade, Commercial Organization and the Industrial Growth in 18th century Nantes", *Revue française d'histoire d'Outre-Mer*, 59 (1972), 70-112.

²⁹ Devine, "The Colonial Trades and Industrial Investment in Scotland, c. 1700-1815" (p. 10).

³⁰ Pétré-Grenouilleau, Olivier, *L'argent de la traite : milieu négrier, capitalisme et développement: un modèle* (Paris, 1996).

³¹ Boulle, "Slave trade" (p. 98); Boulle, Pierre H., "Marchandises de traite et développement industriel dans la France et l'Angleterre du XVIII^e siècle", *Revue française d'histoire d'Outre-Mer*, 62 (1975), 309-330 (pp. 320-321).

invested in industry, they did not invest in the important or decisive sectors driving the industrial revolution.³²

Intercontinental traders were, quite simply, behaving like most other people would have under the same circumstances. They would rather invest in activities they knew already and had mastered than in other sorts of endeavours. This preference for the known did not necessarily exclude some asset diversification, including investment in emerging industries. Yet, this diversification was directed toward industrial firms located nearby, and to firms in which there was a potential for vertical concentration allowing for the utilisation of knowledge and social networks already accumulated in intercontinental trade.

3.1.2. Movements of capital and people to the intercontinental sector

The intercontinental sector both tended to keep its capital to itself and attracted people from the domestic economy. This attraction of people was also an attraction of capital: when someone moved into the intercontinental sector, he took his store of financial, human and social capital with him.

The origins of 166 Nantes families involved in colonial trade in the second half of the eighteenth century are available.³³ The local bourgeoisie had been at the centre of the late seventeenth century expansion, but it did not represent more than 9.4% of the trading families in the second half of the eighteenth century. Most immigrants were traders from the domestic economy. Pétré-Grenouilleaus remark that, out of the 92 traders whose father's profession is known, 59 came from trading families. Migration from other French ports – like Bordeaux or maritime Western France that sent penniless nobles or families ascending the social ladder – was the exception rather than the rule.

In Marseilles, the number of *négociants* increased from 275 at the end of the seventeenth century to 450 around 1750 and still further 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% at mid-century and 46.3% at the end of the *Ancien Régime*. The Solier, whose activity has been studied by Dermigny, 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).

³² Bairoch, Paul, "Commerce international de la révolution industrielle anglaise", *Annales E.S.C.* (1973), 541-571 (pp. 547-9).

³³ Pétré-Grenouilleau, *L'argent de la traite* (pp. 18-41). Dermigny, *Cargaisons indiennes*

³⁴ Dermigny, *Cargaisons indiennes*.

In La Rochelle at the end of the *Ancien Régime*, only 58% of the ship outfitters came from the town itself or its neighbouring regions of Aunis, Saintonge, Guyenne and Gascoigne. In Lorient at the same time, 63% of the ship outfitters did not come from the town itself but, rather, from the neighbouring dioceses, especially Vannes. In Bordeaux, “the majority of the ship outfitters were strangers to the region: Protestants from Languedoc, Catholics from Bretagne and Bayonne, or foreigners like the Bethmann from Frankfort.”³⁵ In the seventeenth 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 seventeenth century by attracting dynamic elements from the cities and ports in its attraction zone. »³⁶

The importance of migration to the trading centres is beyond dispute. Its motivation was probably the following: migration was an important stage in the individual accumulation of financial, social and human capital. When the situation 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 of capital in the intercontinental sector.

3.2. The intercontinental sector: a plausible heart of growth?

3.2.1. The “heart of growth”

To understand what positive role could the intercontinental sector play in domestic growth despite that fact that it attracted and kept for itself capital and entrepreneurs, one can use a neo-classical growth model.³⁷ *Per capita* economic growth, if there is no technical progress or institutional change, can only come from capital accumulation. In order to generate growth, the society has to forego part of its present consumption in order to increase production and consumption in the future. Decreasing marginal returns to capital limits this process. Each additional accumulated unit of capital increases future production by a smaller quantity than the amounts accumulated before. Over time, the gains from capital accumulation decline and, as a result, the speed at which capital is saved will be reduced. At

³⁵ Cf, quoted by Pétré-Grenouilleau: Bouniol, D., “Étude sociale des armateurs Rochelais membres de la Chambre de Commerce dans la seconde moitié du XVIII^e siècle” (Maîtrise, 1972); Moutet, X., “Négociants et armateurs de Lorient au XVIII^e siècle” (Maîtrise, 1974); Butel, Paul, *Les négociants bordelais, l’Europe et les îles au XVIII^e siècle* (Paris, 1974) (p. 16).

³⁶ Lespagnol, André, *Messieurs de Saint-Malo : Une élite négociante au temps de Louis XIV* (Rennes, 1997) (p. 88).

³⁷ Solow, Robert, “A contribution to the theory of economic growth”, *Quarterly Journal of Economics*, 70 (1956), 65-94. On growth models in general, cf. Barro, Robert J., *La croissance économique* (Paris, 1995 (1996)).

some point, the gains from capital accumulation are equal to the cost of forgone consumption. This will lead to a halt in growth as the economy reaches its long-term production level. In order to explain the continuation of growth beyond that point, it is necessary to introduce an exogenous phenomenon such as technical progress. That is why this neo-classical growth model is called an “exogenous” growth model.

However, it is also possible to construct a growth model that does not need an exogenous factor in order to explain sustained growth. Since the mid-1980s, new research on such growth models has been concerned with activities that have declining returns for private actors and non-decreasing returns for the society as whole. An example would be research and development of various technologies. “AK” models use an alternative approach.³⁸ They posit an economic sector in which capital returns are constant. In order to avoid increasing returns to scale, which – without externalities – would predict that no competitive equilibrium can exist, capital must be the only input such a sector uses. Regardless of its size, this sector allows the economy to escape declining returns. That is why it is termed a “heart of growth.”³⁹

Under these conditions, growth is accelerated in the medium run. Even if no capital is invested yet in the “heart of growth” sector, the knowledge about its existence encourages capital accumulation. The usual transition mechanisms in a neo-classical growth model, where capital accumulation is slower and slower till it stops will be not apply. Furthermore, if a heart of growth sector exists, growth can continue unabated in the long run. As long as each additional input of capital can be used in that heart of growth, it will not suffer from declining returns.

However, this model has an unwanted property: even if, in the medium run, the existence of a heart of growth accelerates the development of the non-heart of growth sectors, in the long-run, it non-heart of growth sectors will stop their development as soon as the return they can offer to capital equals what the heart of growth sector can offer. The heart of growth will grow in an autarchic way, and finally dwarf the rest of the economy. This will be avoided if

³⁸ Romer, Paul, "Increasing Returns and New developments in the Theory of Growth", in W. A. Barnett (ed.) *Equilibrium theory and applications* (Cambridge, 1989).

³⁹ The « heart of growth » notion has been introduced by Rebelo, R., "Long-Run policy Analysis and Long-Run Growth", *Journal of Political Economy*, 99 (1991). The Lucas model is another example of a heart of growth Lucas, Robert E., "On the Mechanics of Economic Development", *Journal of Monetary Economics*, 22 (1988). For a general study, cf. Glachant, Jérôme, "Les théories de la croissance : fondements et implications" Paris-I, 1994) and Glachant, Jérôme, "Croissance et structure du système productif dans une économie log-linéaire", *Annales d'économie et statistique*, 39 (1995). Actually, the assumption that the rate of capital accumulation in the intercontinental sector is constant is not a necessary condition for continued growth as long as we assume that this rate is always higher than in the domestic economy.

the non-heart of growth offers something that cannot be provided by the heart of growth, for example consumption goods. In that case, capital accumulation in the heart of growth cannot not be an end by itself. The development of the other sectors of the economy is indispensable if the owners of capital want to enjoy the result of their savings.

The profit rate of the intercontinental sector was higher than in the rest of the economy, and it attracted investments: that corresponds to the definition of a heart of growth sector for the French economy during the period of the late *Ancien Régime*. However, if the capital accumulated in the intercontinental sector was not recycled in the rest of the economy through consumption, it would have been simply an enclave, with no link to French development as a whole.

3.2.2. Why the French port cities were not enclave economies.

This risk was mitigated by the consumption habits of the members of the intercontinental sector. It appears that they were using a steady share of their income to consume domestic French products. In fact, it is ironic that this consumption pattern should be we should present as a good thing. The consumption habits of French traders have often been criticised, and many authors who compare the relative industrial backwardness of France to the rapid industrial progress of England have blamed the lack of capitalist thriftiness of the French bourgeoisie. Hoselitz claimed, for example, that every Frenchman aspired to become a *rentier*.⁴⁰ Taylor and Léon cited the taste for *offices* and land.⁴¹ These swallowed the capital of intercontinental traders and prevented its use in the more dynamic sectors of the French economy. This was also exposed by Colbert and Necker, maybe with some hypocrisies as they knew the State's finance depended in part on the income from *offices* sales⁴².

Recent research on individual ports – Bordeaux, Nantes or Saint-Malo– seems to contradict this traditional view. *Rentes*, land and *offices* were not the “grave” of capital from

⁴⁰ Cf., for example: Hoselitz, Bert F., "Entrepreneurship and Capital Formation in France and Britain since 1700", in M. Abramovitz (ed.) *Capital Formation and Economic Growth (Conference Proceeding, NY, 1953)* (Princeton, 1955), 291-337 (p. 105). This particular thesis « that broadly overestimates the importance of the State in the creation and the funding of industry » (Crouzet, François, "Angleterre et France au XVIII^e siècle : analyse comparée de deux croissances économiques", in M. Margairaz (ed.) *Histoire Economique : XVIII^e - XX^e siècles* (Paris, 1966 (1992)), 323-353, p. 341, note 2) is very disputable. The idea remains.

⁴¹ Taylor, George V., "Noncapitalist Wealth and the Origin of the French Revolution", *American Historical Review*, 72 (1967), 469-496 (pp. 473-474, pp. 477-479, p. 485); Léon, Pierre, "Les nouvelles élites", in Braudel & Labrousse (eds.), *Histoire économique et sociale de la France* (Paris, 1970 (1993)), 601-650 (pp. 632-634, p. 642).

⁴² Doyle, William, *Venality: The Sale of Offices in Eighteenth-Century France* (Oxford, 1996) (p. 20) and Necker, Jacques, *De l'administration des finances de la France* (Paris, 1784) (t.III, p. 149).

the dynamic sector of the economy, and, instead, should be treated just like 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.⁴³ Moreover, the tendency towards conspicuous consumption 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).⁴⁴ Conspicuous consumption neither inhibited the drive to obtain wealth nor did it infringe on the autonomy of the merchant world.

Beside status goods, the community of intercontinental merchants in France had a taste for a large number of consumer goods produced in France such as textiles, foodstuffs, furniture, domestic services, and housing. This shows that the intercontinental port cities were linked to the French domestic economy by the consumption patterns of their merchants. These port cities were supplied by their hinterland, especially in low-value goods, but also by the rest of the country.⁴⁵ During the eighteenth century, the link between the dynamic maritime cities and the domestic economy was never severed in the same way that it now is in some developing countries where rich elites consume mainly imported goods.

The existence of these links was enough to prevent the intercontinental sector from becoming an enclave. Thus, it is plausible that it played a positive role as a heart of growth sector. It is difficult to measure how large was this role. However, one can venture possible numbers based on the simulation of a heart of growth model⁴⁶. These numbers are given as an illustration of the potential effect of the intercontinental sector: the complexity of the computation warrants additional research in a forthcoming paper. According to a first back-of-the-envelope computation, it seems that, without the intercontinental sector being a heart of growth, French stock of capital would have been nearly 30 % smaller, French growth per

⁴³ Butel, *Négociants bordelais* (pp. 325-364). Pétré-Grenouilleau, *L'argent de la traite* (pp. 126-127 and 128-129). Lespagnol, *Messieurs de Saint-Malo* (pp. 735-772). Pétré-Grenouilleau, Olivier, *Les négoce maritimes français, XVIIe-XXe siècle* (Paris, 1997) (pp. 96-101).

⁴⁴ Crouzet, "Angleterre et France au XVIII^e siècle : analyse comparée de deux croissances économiques" (pp. 339-343).

⁴⁵ Le Roux, Thomas, *Le commerce intérieur de la France à la fin du XVIII^e siècle : les contrastes économiques régionaux de l'espace français à travers les archives du Maximum* (Paris, 1996) gives maps of Nantes’s supply areas.

⁴⁶ The model is presented in Guillaume Daudin, *Commerce et prospérité*, (pp. 534-543). A forthcoming paper will deal with the formal side of this simulation. For information, here are the hypotheses: share of capital in domestic income = 25%; preference for the present = 4.5%; rate of profit in the intercontinental trade sector = 6.5%; income per head in 1715: 135 *livres tournois*-1790; income per head in 1790: 205 *livres tournois*; domestic capital stock per head in 1715: 500 *livres tournois*-1790; domestic capital stock per head in 1790: 1015 *livres tournois*; intercontinental sector capital stock per head in 1790: 85 *livres tournois*; no intercontinental sector in 1715 (this is obviously an exaggeration); a scaling factor (I in the model): 1. Based on that, one can compute the inter-temporal consumption elasticity that is compatible with the model, the starting and the finishing conditions, which is equal to 7. More details are available directly from the author.

capita would have been 0.21 percentage point smaller (one-third of total growth), and French GDP would have been 8 % smaller. These numbers are larger than the preceding ones, but not by an absurd amount.

4. Conclusion

The aim of this paper was to contribute to the debate on the role of overseas expansion, and, more particularly, on the role played by the profits from intercontinental trade in the growth of capital in the domestic economy in Early Modern France. O'Brien's method leads to a measure of the profits linked to intercontinental trade of 142 million *livres tournois*. Their direct role in the domestic capital accumulation could only have been limited, as the intercontinental sector was small when compared with the entire economy. Less than 7.5% of French growth can be explained by the capital accumulated in the intercontinental sector. Maybe a change of perspective is necessary. Instead of looking at how the intercontinental sector supplied the rest of the economy with capital, it might be more fruitful to look at how investment in the intercontinental sector encouraged the accumulation of capital in the domestic economy, as it offered a way out of declining returns for successful entrepreneurs that did not trap them in an enclave economy. A tentative measure of the size of this effect can be proffered: even if the effect on GDP is only 8 %, it is three to four times as large as what is found by other methods. If this suggestion is right, the frontiers of the expanding European economy might have been more important for the hopes and the dreams they generated than for the capital they directly provided.