ARTICLES

The Role of Assignats during the French Revolution: An Evil or A Rescuer?

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> The Government cannot introduce a sound money because in the absence of other revenue, the printing of an unsound money is the only way by which it can live. (J.M. Keynes, *A Treatise on Money*).

Hyperinflation during the French Revolution, like the German hyperinflation of the 1920s, has left a lasting imprint on collective memory, most likely because it was associated with momentous political and social developments. Moreover, the years of the French Revolution were disastrous from the economic point of view. Not only did the revolutionary period have the dubious honour of being the first hyperinflation in modern times, but it also witnessed a substantial decrease in output and a severe disruption in the operation of most markets. During the winter of 1794-5, and again during the next one, France suffered from famine — *stricto sensu* — for the first time since the «terrible year» 1709-10. According to reasonable estimates, French industrial output by 1799 was one third below its pre-1789 level; and it had been still lower in 1795 or 1796. As for foreign trade, it had been almost annihilated, though in this

* We wish to thank Dick Eckaus, Paul Krugman, David Landes, Peter Temin and Jeff Williamson as well as participants at the Brandeis, Harvard and MIT Economics Seminars for useful comments and suggestions on earlier drafts. The usual disclaimer applies.

case, war with Britain, the dominant seapower, and slave revolts in the French colonies were serious factors of decline.[1] According to Lévy-Leboyer, the French Revolution was "a national disaster" for the economy.[2]

As this period coincided with the circulation of *assignats*, it was easy to accuse the latter of being at the root of economic problems. French historians have blamed *assignats* not only for inflation, but also for many of the disasters of the period. They have accused them of causing a substantial decrease in output, of disrupting markets, of causing famine, and of rendering the "Reign of Terror" inevitable. Marion (1914) writes: "Among all the causes of the problem of subsistence and famine... paper money was the principal".[3] Chaunu (1989), from the liberal school of historians, emphasized that "between two evils, the National Assembly has always chosen the worst",[4] in particular, the decision of issuing *assignats*. Aftalion (1987), analyzing the economic role of *assignats*, writes: "No other explanation is needed in order to understand the rapid degradation of the economic conditions and the food situation".[5] Already during the French Revolution, *assignats* were seen as an evil. Marat wrote: "The worst disaster is the misery which will increase with time. The cause of it is in the huge amount of *assignats*". On the other hand, Jaurès, from the socialist school, considered *assignats* desirable. In his view, "*Assignats* saved the French Revolution"[6]

What was the role of *assignats* during the French Revolution: an evil, as claimed by most historians, or a rescuer, as depicted by Jaurès? The purpose of this paper is to reconsider the effect of *assignats* during the Revolution.

The two main economic problems during this era were inflation, developing into a hyperinflation during 1795, and a disruption of markets

[1] See Crouzet (1990).
[2] Lévy-Leboyer (1964), p. 27.
[3] Marion (1914), v. II, p. 170.
[4] Chaunu (1989), p. 178.
[5] Aftalion (1987), p. 173.
[6] Jaurès (1923), p. 131.

accompanied by a reduction of output during the years 1793-1795. Accusing *assignats* of causing inflation and supply shortages is to find a scapegoat instead of the true factors: the war and the «dirigist» economy.

The revolutionary wars and the dirigist-interventionist policy are an intrinsic part of the revolutionary message. Therefore, on one hand, there are those who did not want to make these factors responsible for the economic disasters and have preferred to incriminate *assignats*. On the other hand, for liberal historians, disliking the Jacobin message of revolution, to accuse *assignats* was to find one more wrong doing of the Constituent Assembly.

In this paper, we show that inflation was related to the war that erupted in 1792. In the first part of the paper, we provide a brief sketch of the history of *assignats*, highlighting the fact that they played several roles. In the second part, we analyze the relation between *assignats* and inflation. We construct a new price index. We show that the beginning of inflation coincided with the war in 1792, and not with the issue of *assignats* in 1790-91. [7]

In part three, we estimate the effects of a war-time budget deficit on inflation. The 1792 war led to a high budget deficit financed by the issue of fiat money — *assignats*. The consequences of financing a deficit by printing money have been studied at length in the case of modern hyperinflations. [8] In particular, Cagan (1956) has shown that one can estimate the maximum government deficit which can be financed through seigniorage without lapsing into runaway inflation. Estimating the money demand, as in Cagan, allows us to find this maximum level of seigniorage. Our estimation shows that the French hyperinflation unwound in a similar way to the European hyperinflations of the 1920s.

In part four, we briefly analyze the relation between *assignats* and the fall in output. We show that the transition from a liberal to a «dirigist» economy was accompanied by deleterious effects on the supply side. Part five concludes.

[7] Since the government deficit did not increase during 1792, the inflation rate was not high in that year. In 1793, on the other hand, government deficit doubled in real terms.
[8] See Cagan (1956), Cukierman (1988), Dornbusch and Fischer (1986) and Sargent (1986).

1.The Role of Assignats.

The decision to issue *assignats* was a consequence of the budgetary problems of the *Ancien Régime,* problems which eventually triggered the Revolution. Louis XVI faced the daunting task of financing the budget deficit that resulted from a debt service, standing at 230 million *livres* in 1789, i.e. 35 percent of total government spending, imposed by a public debt of 4.5 billion *livres.* [9] Since the public was becoming reluctant to increase its holding of debt, there was no way to finance the deficit by borrowing more. On the other hand, the government could not increase taxes, since Frenchmen were sincerely, though mistakenly, convinced that they were overtaxed, and they would resist new taxation. [10]

Eventually, the convening of a representative body, the States General, became the only way out of the *impasse* (the States had last been summoned in 1614). They met in May 1789 with the purpose of solving the budgetary crisis, but the Third Estate was soon steering things towards political and social revolution. By June 1789, the Third Estate had constituted itself into a National Assembly, taking power into its own hands. However, the National Assembly faced the same persistent financial crisis.

The different possibilities available to solve the budgetary problem were: (i) to repudiate part of the debt, (ii) to print money, (iii) to forcibly borrow money equivalent to a partial rescheduling of the debt, or (iv) to offer better terms on debt so as to increase its attractiveness. [11]

[9] White (1989) argues that the debt problem was not so acute and could have been solved. However he does not deny that in 1789 the budget crisis was unavoidable. The data on the budget deficit presented in Table 1 are different from White's since we use the data given presented by Harris (1930) and Braesch (1934). In this case we did not use White's data because they only cover the beginning of the period.

[10] See Weir (1989).

[11] The financing of the government deficit is determined by the expression

$$(G+rB) - T = (\Delta B+\Delta M)/P$$

where B is the public debt, M is money printed by the government, the amount of G is real public expenditures (debt service excluded), rB is debt service and T are taxes in real terms.

The Assembly had declared existing taxes to be "illegal" and had ruled that there would be no repudiation of the debt. One suggestion to solve the budgetary problem was to expropriate and sell church property. The resulting revenue would then be used either to finance the debt service or to buy back the entire public debt. Since the deficit was increasing at an alarming pace, and the sale of land could not be arranged at short notice, the National Assembly chose to solve the problem by issuing a new financial instrument, *assignats*. They would be used to finance the budget deficit, but their bearers had the possibility of using them to buy church property; those thus paid in would be cancelled and destroyed, so that the paper in circulation would gradually come to an end. *Assignats* would thus be interest-bearing promissory notes guaranteed by church land and redeemable as the land was sold.

The *Constituants* were divided over whether *assignats* should become money, i.e. be legal tender. Some claimed that an increase in money would lead to inflation. Others claimed that there was a reduction in the money stock, which led to a "scarcity of money" in the economy, so an increase in money would have a positive effect on supply and activity. [12] Some *Constituants* did not enter the economic debate and saw the printing of fiat money as a political act, a manifestation of national sovereignty: "Every nation has the right to manufacture money, to substitute territorial specie for metallic specie". [13]

The result of the Assembly's debates was that the exact role to be played by *assignats* was left ambiguous. During their existence, from 1790 to 1796, *assignats* played a number of roles in succession. At the time of their issue they constituted debt. For some, this new asset was viewed as a partial rescheduling, for others, as a new attractive asset. They later became the most liquid asset in the economy, money.

[12] «Toutes les maisons de banque et de commerce, tous les hommes dans les affaires éprouvent une gêne alarmante par le défaut absolu de numéraire». *Gazette de France,* 24 Sept 1789. There was also a collapse of the commercial credit system, which relied upon bills of exchange, and which badly suffered from loss of confidence.
[13] Anson quoted in Harris (1930), p. 15.

Finally, and despite the original aversion to debt repudiation, they were the vehicle by which inflation temporarily erased the government's debt service.

Table 1
Expenditures, Deficit and Debt of the French Government: 1789-1795
(current prices, millions of livres)

Year	[1] Government Expenditures G	[2] Taxes T	[3] Government Deficit G-T	[4] Debt Financing ΔB	[5] Money Financing ΔM	[6] Land Financing ΔL	[7] Total Financing	[8] Total Debt B	[9] Gov. Deficit ratio of GNP G-T/Y
1789	656	396	260					4500	0.08
1790	657	192	465	-93	590		497		0.15
1791	1571	234	1337	-637	770	326	459		0.41
1792	1450	366	1084	-200	860	278	938	3570	0.28
1793	3532	336	3196		2380	341	2721		0.64
1794	3180	490	2690		2250	546	2796		0.47
1795	16380	1416	14964		16650	655	17305		0.06

Source: Col. 1-4, Harris p. 51. Col. 7, Harris p. 86. Col. 6 is the flow of money corresponding to the stock of money presented in Tables 2 and 3.

Notes: Government expenditures, Column 1, include debt service.

Col. 4 + col. 5 + col. 6 = col. 7. Total financing, col. 7, should be equal to government deficit, col. 3. However, during 1791, the discrepancy is of one billion livres. Braesch (1934) presents estimates for government expenditures that are lower than Harris, probably because Braesch's estimates do not include the change in the stock of debt. Braesch's estimate of government deficit for 1791 is 589m. livres.

The exact kind of financial instrument that *assignats* were must be clear, in order to understand their consequence on inflation. There is no clear cut rule in monetary theory as to which asset should be considered money and affect inflation. Money, M1, is defined as the most liquid asset, the medium of exchange in the economy. However, since many other assets that are not the medium of exchange also have some degree of liquidity, they can have inflationary effects as money does. Therefore, monetary aggregates, M2 and M3, which include assets ranked by their liquidity, are other ways of measuring money in the economy. Nowadays M1 includes currency and checking accounts; M2 includes M1, saving deposits and money market accounts;

M3 includes M2, mutual funds and time deposits. L is an aggregate of liquid assets, which includes M3, short-term securities, commercial paper, bonds and bankers' acceptances; it is not a monetary aggregate.

Using these definitions for the period of the Revolution, we define M1 as specie and notes of the *Caisse d'Escompte*; [14] M2 includes M1, bills of exchange, and commercial paper. In which aggregate should *assignats* be included? Since the role of *assignats* evolved over time from a non-monetary asset, L, to money, M1, we shall analyze the different roles during the period 1789-1796.

December 1789-March 1792

A decree passed by the Assembly in December 1789 decided that *assignats* would be a financial security to be exchanged for land, and that they would not be a medium of exchange. They were issued only in large denominations, were interest-bearing, and were not legal tender. The notes were confined to the 1000 livre denomination until April 1790, 200 until October, and 50 until May 1791, as shown in Table 2.

Assignats thus constituted a new type of debt, attractive enough to be accepted by the public since they allowed it to purchase land from the government. [15] Preparations were lengthy, and the first *assignats* were issued only in August 1790, eight months after the decision to issue them was taken (see Table 2). In this interval, instead of assignats per se, the public received *"promesses d'assignats"* issued by the *Caisse d'Escompte*. [16]

[14] Established in 1776, it was the only French bank which could issue banknotes.
[15] The first major decision of the Assembly in order to solve the budget deficit problem was the nationalization of church land in November 1789. The *Constituants* were not always aware that an increase in the stock of wealth would not increase the stream of national savings. The decree was a means of appropriating part of private savings by selling the land or by indexing *assignats* to land in order to increase their attractiveness.
[16] *Assignats* began to be issued in exchange for *Caisse d'Escompte* notes on 16 August 1790: 360m *livres'* worth of *assignats* were issued in this manner.

Table 2
The Issue of Assignats during the French Revolution
(millions of livres)

Year	Month	Assignats decreed [1]	Potential Assignats issued [2]	Assignats issued [3]	Assignats burned [4]	Assignats in circulation [5]	interest rate on assignats [6]	smallest denomination livres [7]
1789								
	19-Dec	400					5%	1000
1790								
	17-Apr	[400]	400				3%	200
	29-Sep	800	1200					
	8-Oct						0%	50
	31-Dec			590		590		
1791								
	6-May							5
	5-Jun	600	1800	1150	170	980		
	17-Dec	300	2100					
	31-Dec			1730	370	1360		0.5
1792								
	27-Apr	300	2400	2075	475	1600		
	31-May			2200		1650		
	31-Jul	300	2700					
	24-Oct	400	3100					
	31-Dec			2870	650	2220		
1793								
	1-Feb	800	3900	3100	700	2400		
	7-May	1200	5100					
	31-Aug			4800	950	3850		
	28-Sep	2000	7600					
1794								
	19-Jun	1205	8800	8236	2182	6054		
	22-Sep		9978	8932	2358	6574		
1795								
	21-Mar		12000	10787	2639	8148		
	1-Aug		16000					
	23-Sep			20394	3123	17271		
1796								
	9-Feb			40279	5775	34504		

Source: Harris (1930) and Marion (1914).
Notes: Col. 1 is the flow of assignats decreed. The second decree only confirms the first one. Col. 2 is the maximum notes that can be issued; it is the cumulative sum of col. 1. The notes issued, col 3, are the stock of assignats issued de facto. Col. 4 are assignats burned when exchanged for land as well as damaged assignats.

In April 1790, the Assembly passed a new decree which lowered the interest rate on *assignats,* reduced the denominations in which they were issued, and made them legal tender. The direction in which things were moving was clear. *Assignats* were increasing in liquidity and becoming a medium of exchange [17]. In this development, the fall of 1790 was a turning point. The *Constituants* then decreed another large issue of 800 million, and abolished interest on *assignats*. Thus, they opened up the way to uncontrolled issues, and therefore to the creation of an unsound money.

In 1791, the liquidity of *assignats* was greatly enhanced: from May 1791 they were issued in the denomination of 5 *livres,* and reached as low as 10 *sols* in December 1791. Over time, they became *de facto* the only medium of exchange. This was particularly true after April 1793 when, despite the depreciation of *assignats* relative to specie, the use of two different prices was prohibited. [18]

During this period, as shown in Table 1, the role of *assignats* was not to finance the primary deficit but to redeem the debt and finance the debt service [19]. The reason for this swap was the National Assembly's wish to reduce the budget deficit by reducing the debt service. The exchange of the floating debt for *assignats* — decided in

[17] Despite the fact that from April they became legal tender, they were still issued in large denominations and, therefore, could not be used easily as a medium of exchange, M1. The *Caisses Patriotiques* played the role of private banks issuing small denominations of paper instead of *assignats*. However, the amount issued by the *Caisses* was not more than 140 millions *livres*. See White (1990).

[18] The decree of April 8, 1793 ordered prices in contracts to be expressed in terms of *assignats* and forbade that prices be expressed in terms of specie. This effectively prohibited the use of two prices. This was reinforced by the decree of 11 April, 1793 which provided for severe penalties for anyone "qui stet ou propose différents prix d'après le paiement en numéraire ou en assignats". One is, therefore, justified in supposing that the circulation of specie effectively ceased with the promulgation of these decrees, even more so following the decree of September 5, 1793 which specified: "trafficking of assignats would be punished by penalties up to death". Harris goes so far as to state that the government prohibited payments in gold and silver in fulfilment of private contracts and prohibited the sale of numéraire on 8 April, 1793" (Harris (1930), p. 177-8).

[19] The primary deficit is defined as all government outlays, except interest payments, less all government revenues.

September 1790 — was a monetization of part of the debt.[20] This role was to disappear after the declaration of war.

April 1792-February 1796.

War was declared against Austria and Prussia on 20 April, 1792. Because of military expenditures, the government deficit increased greatly, though the repayment of debt was suspended. In 1793, the government tried to finance war expenditures by floating two loans.[21] They hoped to raise 2 billion *livres,* but only 10 percent was collected; this attempt met with little success since the plebs did not save and the bourgeois and nobles, who did, were not likely to buy debt issued by a revolutionary government. Printing *assignats* was, therefore, the only possible way of financing the war[22]. An inflationary process developed at the same time.[23] In order to put an end to inflation, price controls — "les lois du maximum" — were passed, largely because of pressure exerted by the "*sans-culottes*".

The price controls or laws of maximum were in effect from May 1793 until December 1794.[24] This was the period of the "terreur économique". The first set of controls, which only dealt with grain and varied from area to area, were a failure. They were based on the average price of grain in each locality from January to April 1793. As

[20] The debt was divided into three categories. The 'Dette Perpétuelle' and the 'Dette Viagère' paid annuities but no capital; the third category, the 'exigible debt', was debt that paid interest and capital and which was "on demand". This type of debt had to be bought back. The floating debt is the non-consolidated part of the debt.

[21] One of these loans was "forced": it had to be compulsorily subscribed to by well-to-do citizens; but the latter could be exempted, provided they subscribed to the second, "voluntary", loan.

[22] Still a portion of military expenses — imports of raw materials, wheat and some payments to the soldiery — had to be paid in specie.

[23] Food prices had been high in 1789, following a very bad harvest in 1788, but they fell back in 1790. Some increases occurred late in 1791, because of a mediocre harvest and slaves revolts in the colonies, which affected colonial produce prices, but the inflationary process, i.e. a continuous increase in the rate of inflation, started only in 1792.

[24] Robespierre fell from power in July 1794 and was executed.

a result of this failure, a new law was passed in September 1793, forcibly reducing the prices of forty basic commodities.[25]

The consequence of the price freeze was that the peasants were no longer interested in selling their crops, at the fixed prices: "The day the laws of maximum came into effect, goods deliveries ceased instantly".[26] The revolutionary government was forced to commandeer and seize whatever was found to nourish the army and the city of Paris, while the peasants tried to hoard. Markets were badly disrupted and the summer of 1794 was characterized by a poor harvest, largely because cultivation had decreased: "If you don't pay for wheat at its market-price, the farmer will not sow".[27]

By the end of 1794, peasants and merchants were pressuring authorities to end "dirigisme". Most members of the Convention had returned to their early *laisser-faire* views, and even Parisian consumers had lost their faith in controls. So, on 24 December 1794, the laws of maximum were abolished. As a consequence of the terror and war, output had decreased in 1794. The council responsible for the enforcement of the maximum laws was informed that "the maximum system was the greatest single cause of the deficiency of subsistence".[28] Although agricultural output increased in 1795, industrial output decreased in some regions by 30 percent.[29] When price controls and requisitions were abolished, inflation surged upwards. In 1795, the rate of inflation and the rate of increase in money were both spiralling upward (see Table 3). The rate of inflation reached 3500 percent, erasing *de facto* a sizable portion of the public debt.[30] Thus, the *Directoire* decided to destroy the plates used to print *assignats* on

[25] Which, in fact, was done not only to peg prices, but to lower them to their 1790 values plus one third. In the next section we will analyze the consequences of this measure.
[26] Extraits des mémoires de la Tour du Pin, cited in Aftalion (1987), p. 379.
[27] Speech on the maximum, at the Convention, 27 April, 1793.
[28] Correspondence of Carnot, cited in Harris, p. 149.
[29] See Harris, p. 144.
[30] In 1796, France had returned to the use of specie at the same parity as before inflation. Therefore, the government continued to face the same budgetary problems as in 1789, and even worse because of the war. The debt burden was resolved only in 1797 by the "bankruptcy of two-thirds", which is *de facto* a repudiation of two-thirds of the debt.

18 February, 1796 (but the assignats were neither retired from circulation, nor fully demonetized before July 1796).

Table 3
The stock of assignats in circulation, 1791-96
(millions of livres)

Year	1791	1792	1793	1794	1795	1796
January	560	1420	2350	4800	7000	30000
February	630	1490	2490	4960	7350	34500
March	710	1560	2690	5090	7550	
April	810	1600	2930	5270	8500	
May	900	1650	3160	5550	9600	
June	970	1700	3430	5750	11000	
July	1030	1750	3680	5920	13500	
August	1090	1810	3850	6100	15100	
September	1150	1900	4010	6250	16800	
October	1220	2000	4180	6450	18500	
November	1300	2120	4380	6650	21000	
December	1360	2220	4600	6850	23500	

Source: Aubin (1991), p. 760.

Then, they tried a new instrument, *mandats territoriaux.* They were, *de facto,* not different from the early *assignats:* they would be exchanged against land. The first mistake was to fix far too high a rate for the exchange of *assignats* into *mandats*. The second was, again, to issue too many of them within a short period. Therefore, they depreciated as much in six months as *assignats* did in six years. By the end of 1795, most transactions in the provinces and many in Paris were only made in specie; in the summer of 1796 the circulation of paper-money was over.

This short historical survey underlines the fact that *assignats* were not always money. *Assignats,* when first issued, were an asset that should be included in the L aggregate. They were an asset that made it possible to avoid repudiation of the debt. From the economic point of view, it would have been wiser to repudiate the debt; however, it

was against the revolutionary ideology, as well as politically difficult, since it would have hurt a powerful part of the population. From 1790 *assignats* should be included in M2 and from the end of 1791 in M1. The effect of the issue of *assignats* on inflation was, therefore, not constant during the whole period.

2. Budget Deficit, Money, Inflation.

Assignats were accused of being at the root of inflation. Empirical work analyzing the effects of the issue of *assignats* on inflation has been rare. Aftalion (1987), using the simple equation of the quantity theory of money, has found a particularly close relationship between the issue of *assignats* and inflation.[31] However, his estimation is biased. First, he uses an equation that does not incorporate the effect of inflation on the demand of money. Secondly, the data he uses are not appropriate, the main problem being with the price index. The proxy for inflation which is commonly used is the series that gives the depreciation of *assignats* relative to specie.[32] During this period, however, specie ceased to be a medium of exchange for domestic payments and was confined to the role of a foreign asset. The data on the depreciation of *assignats* relative to specie, therefore, reflect the depreciation of the exchange rate.

Since the depreciation of the exchange rate is, in the long run, closely linked to the inflation rate by the Purchasing Power Parity equation (PPP), the exchange rate at first sight seems a good proxy for inflation. However, recent work in international economics has shown that, in the short run, depreciation can behave differently from prices, especially during periods of acceleration of inflation; Dornbusch (1988) wrote: "The evidence on deviations from PPP leaves little doubt that they have been large and persistent."[33]

[31] Aftalion (1987), pp. 256-260.
[32] According to the purchase price of specie by the Treasury.
[33] p. 1080.

The difference between inflation and depreciation during the French Revolution can be largely explained by speculation, capital flight and uncertainty about the political stability of France. This difference between inflation and depreciation of the exchange rate was already noted by Lavoisier at the beginning of 1792: "If one consults the price of wheat, of meat... or of daily wages, it will be seen that the increase of their prices is not nearly in proportion to what one calls the loss of the *assignats*."[34]

Another possible proxy for the inflation rate is the local tables of depreciation of *assignats*. They were established in each department in 1796, in order to adjust contracts which had been entered into during the depreciation of paper money (which officially started on 1 January, 1791). If they had included only commodities, these tables would have displayed the inflation rate. However they incorporate the depreciation of *assignats* relative to gold and silver, because of the weight given to silver and gold quotations in Paris.[35] They are therefore a mix of the "true" price index and the foreign exchange rate, and they cannot be an adequate proxy for the price index.

Data on the prices of some goods, in particular food, are available for part of the period, but they are scarce for the period during which the laws of maximum were enforced (1793-94), not surprisingly since markets functioned poorly. Pris (1975) has gathered the changes in the prices of plate glass sold by the Saint-Gobain Company. We have found another good on which we have daily data, produced largely with domestic inputs and not influenced by seasonal movements or technical change. The good in question is newspapers. We have gathered data on the price of five newspapers printed in Paris: the *Gazette de France,* the *Journal de France,* the *Mercure Universel,* the *Annales Républicaines Françaises* and the *Annales Patriotiques et Littéraires* (See Table 4)

[34] Lavoisier(1792), pp. 501-2. Harris (1930) asks the same question: "Does not the higher apparent depreciation exhibited by the Treasury tables once more warn us of the fictitiousness of the depreciation reflected by the prices of gold and silver?", p. 105.
[35] Harris (1930) writes: "The price of gold and silver and the price of land had too much weight in the construction of the local tables, the price of commodities and raw materials had too little weight", p. 119.

Table 4
The Price of newspapers during the French Revolution

Year	Price indexes for a 3 month subscription, Dec. 1792 = 100				
	Gazette de France	Journal de France	Mercure de France	Annales Républicaines Françaises	Annales Patriotique
December-1789	100	100	100	100	100
December-1790	100	100	100	100	100
December-1791	100	100	100	100	100
1792					
April	164	100	100	100	100
August	238	91	100	100	100
September	238	100	100	100	100
December	238	100	100	100	100
1793					
January	238	100	117	100	100
September	238	120	117	100	100
December	238	120	120	100	120
1794					
January	257	120	120	100	120
April	257	120	120	120	120
November	257	120	140	120	120
December	269	130	172	130	140
1795					
January	269	150	172	150	166
February	317	150	172	150	178
March	317	150	172	170	222
April	417	150	172	170	222
May	595	210	252	250	222
June	595	310	400	300	300
July	993	500	400	500	555
August	993	500	400	500	555
September	1488	800	500	800	888
October	1983	1200	667	1000	888
November	2976	2000	1500	1300	1388
December	10000	5500	3333	5000	5555
1796					
January		6000	4000		
February		6000			

A priori, the series of the price of newspapers cannot be a proxy for the price index, since it is only the price of one good in one city. However, Cechetti (1986), analyzing the optimal price setting rule, has examined the behaviour of the price of newspapers in the US during the 1970s, and from his work we can conclude that the prices of newspapers are well correlated with the price index. However, since these prices are set in a discontinuous way, one gets a better proxy for the price index through smoothing. Moreover, the price series we gathered is not a daily spot price, but one for a monthly subscription. This difference is negligible, as shown by similar data during the hyperinflation in Germany. [36]

We are fully aware of the difficulties implicit in a price index for such a period as the French Revolution. However, adding to the local table index the information on the price of these two goods — plate glass and newspapers — increases the quality of the proxy and makes a better index.

Table 5
Price Indexes during the French Revolution

Year	Price Indexes					Price Increase % (per year)		
	Treasury Figures [1]	Local Tables [2]	Newspapers [3]	Glass St-Gobain [4]	Average Price Index [5]	Treasury Figures [6]	Local Tables [7]	Average Price Index [8]
December-1788	100	100	100	100	100			
December-1789	100	100	100	100	100	5	0	0
December-1790	109	100	100	100	100	4	0	0
December-1791	130	116	100	100	105	19	16	5
1792								
March	147	135	113	100	116			
June	175	139	113	115	122			
September	139	133	128	115	125			
December	139	132	128	115	125	7	14	19
1793								
January	196	151	131	120	134			
February	192	154	131	120	135			
March	196	159	131	120	137			

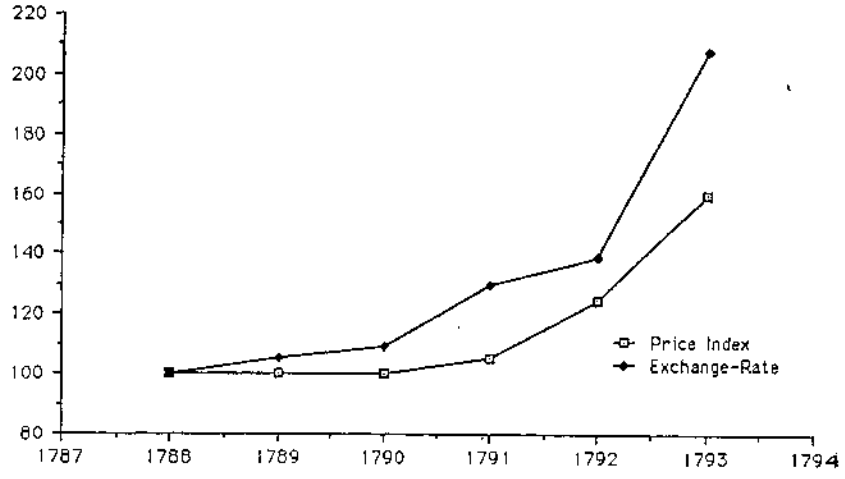
[36] Cechetti (1986) examines the optimality of the price-setting rule called [s,S], in which the price is fixed until its real value reaches the floor, s.

April	232	173	131	120	141			
May	192	174	131	120	142			
June	277	201	131	120	151			
July	357	232	131	120	161			
August	454	245	131	120	165			
September	370	243	135	160	179			
October	357	233	135	160	176			
November	303	205	135	160	167			
December	208	181	140	160	160	50	37	28
1794								
January	250	198	143	160	167			
February	243	202	143	160	168			
March	277	217	143	160	173			
April	277	222	147	160	176			
May	294	233	147	160	180			
June	333	251	147	160	186			
July	294	241	147	160	183			
August	322	254	147	160	187			
September	357	272	147	160	193			
October	357	285	147	160	197			
November	417	312	151	160	208			
December	500	350	168	200	239	140	93	49
1795								
January	555	397	181	200	259			
February	588	443	193	300	312			
March	714	555	206	400	387			
April	897	706	226	500	477			
May	1281	1073	306	800	726			
June	2250	1730	381	1100	1070			
July	2469	2203	590	1600	1464			
August	3303	2717	590	2000	1769			
September	3615	3436	895	3000	2444			
October	7740	4695	1148	4000	3281			
November	10290	8130	1833	7000	5654			
December	13125	12346	5878	10000	9408	2525	3427	3830
1796								
January	14773	15873	6759		11383			
February	20287	20000			12521			

Source: Col. 1 Caron (1909); col. 2 Aubin (1991), col. 4 Pris (1975).
Notes: Col. 1 is based on the depreciation of assignats relative to specie, and therefore on the exchange rate. Col. 3 is derived from Table 4. Col. 5, our price index, is an average of col. 2, 3 and 4.

So, *Table 5* presents the various price indexes. In column 1, we present the exchange rate; in column 2 the local tables index; in column 3 the price of newspapers in Paris; in column 4 the price of plate glass. Then, as a very rough but synthetical approximation, we average these three series. Column 5 is the price index we adopt. The data show that the inflation rate picked up only in 1792. Figure 1 shows that, indeed, this series behaves differently from the foreign exchange rate.

Figure 1
Inflation and Depreciation of the exchange rate, 1788-1793
(Indexes, 1788 = 100)



Source: Table 5.

In his money demand estimation, Aftalion's series of money is the stock of *assignats*. It is more appropriate to use some monetary aggregates. The data on the monetary aggregates are presented in Table 6. During 1790, we have shown that *assignats* constituted a type of debt and should therefore be included in the aggregate L. During the years 1790-92, the increase in the circulation of *assignats* was accompanied by a withdrawal of specie from circulation. [37] After April

1793, the circulation of specie had, for all practical purposes, come to an end. Despite the growing issues of assignats, however, the money, M1, only began to increase in nominal terms after 1792.

Table 6
Money and Depreciation during the French Revolution
(millions of livres)

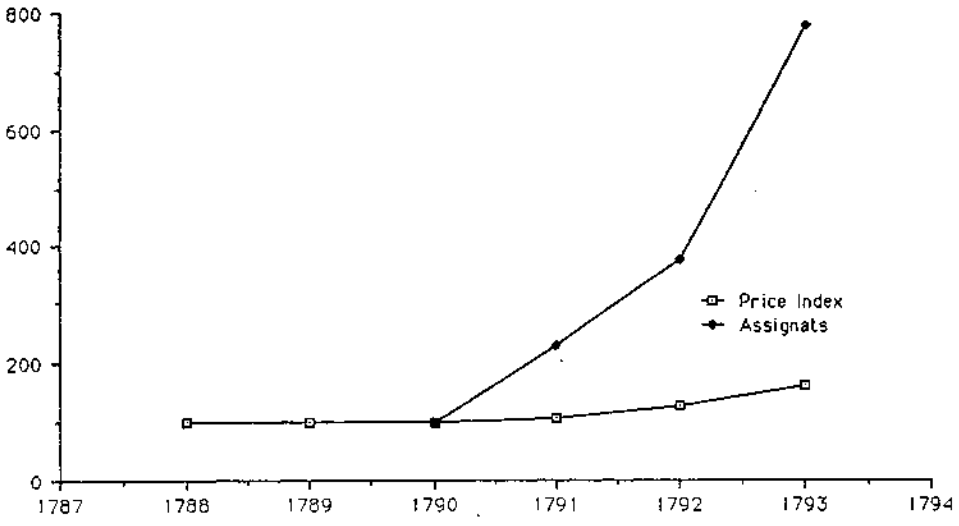
Year	Specie in circulation [1]	Notes of the Caisse d'Escompte [2]	Assignats [3]	Money Stock M1 [4]	Monetary Aggregate M2 [5]	Real Money Stock M1/P [6]
1788	2000			2000	2000	2000
1789	1900	100		2000	2000	2000
1790	1600	360	590	1960	2550	1960
1791	500	50	1360	1910	1910	1819
1792	100		2220	2320	2320	1856
1793			4600	4600	4600	2875
1794			6850	6850	6850	2866
1795			23500	23500	23500	250
1795						
January			7000	7000		2698
February			7350	7350		2355
March			7550	7550		1951
April			8500	8500		1781
May			9600	9600		1322
June			1100	11000		1028
July			13500	13500		922
August			15100	15100		854
September			16800	16800		687
October			18500	18500		564
November			21000	21000		371
December			23500	23500		250

Notes: Until 1791, M1 includes specie in circulation and notes by the Caisse d'Escompte; from 1791, it includes also assignats.

[37] Brezis and Boboth (1992) have collected data on newspapers during the German hyperinflation. The data include daily spot prices as well as prices for subscription. The two series behave in the same manner.

In Table 6 we present data on M1, *assignats*, and the real money stock. It is not surprising that inflation started only in 1792, since the money stock, M1, did not increase until 1791. In 1792, there was an increase in money as well as in the inflation rate. In 1793 and 1794, the inflation rate was much lower than the increase in money, due to the maximum laws. At the end of 1795, we have a typical case of hyperinflation: prices of news-papers were changed as often as three times a month.

Figure 2
Inflation and assignats in circulation, 1788-1793
(Indexes, 1790 = 100)

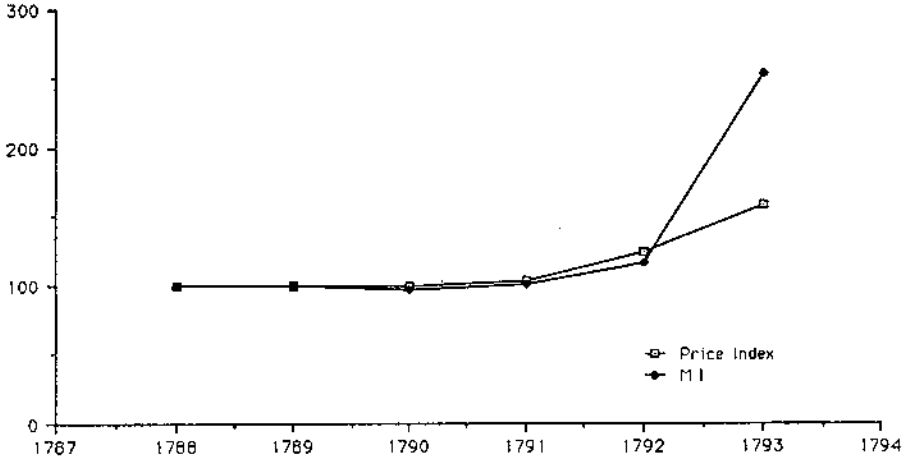


Source: Tables 3 and 5.

Figure 2 shows that there is not a close relation between *assignats* and inflation, which is not surprising, since *assignats* were not liquid in the first period. However, there is a close relation between M1 and the price index until the promulgation of the laws of maximum in 1793 (See Figure 3). To consider the issue of *assignats* as the cause of inflation is therefore not accurate. Until 1792, *assignats* did not cause inflation.

However, there is no doubt that the huge increase in *assignats* from 1792 onwards is correlated with the inflation starting then. We should go one step further and question why there is an increase in *assignats*. As shown in Table 1, from 1792 onwards, the only role of *assignats* was to finance the budget deficit, i.e. war expenditures.

Figure 3
Inflation and assignats in circulation, 1788-1793
(Indexes, 1788 = 100)



Source: Tables 5 and 6.

Source: Tables 5 and 6.

Since the deficit could not be financed by new debt or taxes, printing money was the only option. Without *assignats*, the French government could not, at short notice, have increased its expenditures by 150%. Therefore, by creating a new asset, *assignats*, the *Constituants* had paved the way for an unsound money that permitted the financing of the deficit. We do not question the political choice of waging a war; given this political choice, *assignats* were a necessity. It is, therefore, not the *assignats*, but the political decision of starting a war, which should be considered as having caused inflation. [38]

[38] However, since his estimation period starts in 1792, this is not a serious problem.

3. Budget Deficit and Inflation.

The government deficit during the French Revolution had increased from 10 percent of GNP in 1789 to 64 percent in 1793. In 1793, the increase in the government deficit, GD, was due to the intensification of war (See Table 1).

The relation between large government deficits financed by printing money and hyperinflation was first analyzed by Cagan (1956). We adapt Cagan's model to the French Revolution period.

The government budget constraint during the French Revolution is:[39]

$$GD = \Delta M/P \qquad (1)$$

Where GD is government deficit. Equation (1) can be rewritten as:

$$GD = \Delta M/P = (\Delta M/M)M/P = \mu\sigma \qquad (2)$$

where $\mu = \Delta M/M$ and $\sigma = M/P$.

Cagan (1956) has shown that the demand for money during an inflationary episode, can be written as:

$$M_t/P_t = e^{\alpha\pi e}t+\gamma \text{or } m_t - P_t = \alpha\pi^e_t + \gamma \qquad (3)$$

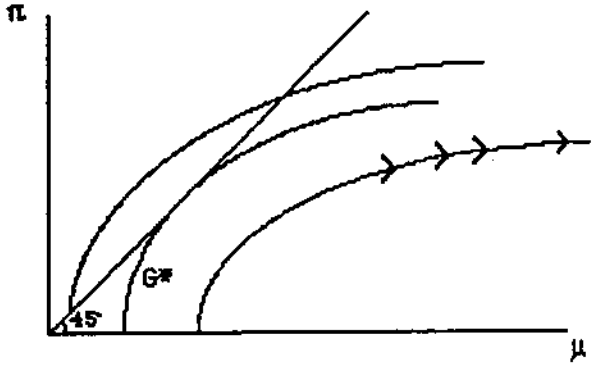
Where m_t and P_t are the natural logarithms of the money stock and π^e_t is the expected inflation rate.
From equation (3) it follows that:

$$GD = \mu e^{\alpha\pi e}t+\gamma \qquad (4)$$

[39] This resulted from exporting specie to finance the current account deficit, from capital flight and from hoarding; once more, under Gresham's Law, bad money drove out good money.

Thus for every government deficit, GD, we get the locus of μ and π as can be seen in Figure 4. Steady state situations are defined by the inflationary expectations being equal to the inflation rate as well as to the money increase. Steady states are represented in Figure 4 as the 45° line. The curve GD* represents the maximum government expenditure level that can be financed by a steady state inflation. For deficit greater than GD*, there will be no steady state (such that $\mu = \pi$) and, therefore, there will be a process of runaway inflation. The inflation rate that maximizes GD is $\pi^* = -1/\alpha$.

Figure 4
The Inflationary Process



In order to estimate GD*, we have to estimate the money demand equation. We follow Cagan's work in the estimation of the money demand. As in Cagan (1956), we assume adaptive expectations that can be expressed as: [40]

$$\pi^e_t = \beta\pi_t + (1-\beta)\pi^e_{t-1} \qquad (5)$$

By substituting (5) into (3) and by writing (3) for period t-1, we obtain:

[40] The trouble for the French government was that the depreciation of *assignats* during the two years preceding the war had undermined the credibility of the new paper-currency, lowered the rate of exchange and so made more expensive the imports which the country needed, specially for war purposes.

$$m_t - P_t = \alpha\beta\pi_t + (1-\beta)(m_{t-1} - P_{t-1}) + \beta\gamma. \qquad (6)$$

We therefore estimate the following equation for the 1788-96 period:

$$m_t - P_t = \alpha\pi_t + b(m_{t-1} - P_{t-1}) + c + u_t \qquad (7)$$

Table 7
Money Demand Equation: 1789-1796

1789-96	π	m-p	Constant	Dummy	R2	SEE	DW	Alpha	Beta	Gamma	π^*	GD*
2SLS	-0.93 [0.33]	0.96 [.05]	0.21 [0.18]		0.98	0.12	2.20	-23.25	0.04	5.25	0.04	3.02
2SLS & Restricted	-0.91 [0.3]	0.98 [0.01]	0.14 [0.11]		0.98	0.12	2.21	-45.40	0.02	7.20	0.02	10.80
2SLS & Dummy	-0.65 [0.33]	0.95 [0.04]	0.12 [0.1]	0.28 [0.1]	0.99	0.10	2.50	-13.00	0.05	5.66	0.07	8.13

Notes: The equation estimated is: $m_t - p_t = a\pi_t + b(m_{t-1} - p_{t-1}) + c + u_t$. Our first estimation is a two stage least squares. In the second one, we have a restriction on the initial demand for money in 1789: we restrict Gamma to 7. In the third estimation, we add a dummy during the Terror period. We use annual data for 1789-94 and monthly data for 1795-96. We translate the annual data to monthly terms in order to have consistent series.

The results are presented in Table 7. Since prices cannot be considered exogenous, the estimations are in 2SLS. We try three different specifications: we add a dummy for the Terror period, and we also test the specification with a restriction on γ, such that the money stock in 1788 is 2000m *livres*. On the right hand side of Table 7, we present the derived estimates of the parameters of equations (3) and (5). β being close to zero, means that expectations are adapting slowly. We calculate GD*, the maximum government deficit level that can be financed by a steady state inflation, and π^*, the corresponding inflation.

We find that, depending on the specification, π^* moves between 2 to 7 percent per month. This optimal rate is lower than the inflation rate obtained during the second half of 1795. Cagan's results on the German hyperinflation have underlined the same paradox, that the

inflation *de facto* was higher than the optimal rate. However, Sargent (1981) has shown that, when estimating Cagan's equation in a consistent manner, "the estimates are so loose" that he cannot reject the arguments that "the creators of money were inflating at rates that maximized their command over real resources." [41]

Our estimation of the French hyperinflation tends to show that it had similarities with the hyperinflation studied by Cagan. The point estimate of the optimal inflation is much lower than the *de facto* one. The point estimates for GD*, the maximum government deficit, are also low, around 7 million per month. During the French Revolution, the highest deficit was 166m *livres* per month in 1793 at 1789 prices (see Table 1). [42] Therefore, it seems from this estimation that a steady rate of inflation could not allow seigniorage high enough for financing the huge deficit. Runaway inflation was a necessity. However, since the confidence interval is very broad, we find that with a confidence coefficient of 95 percent, we also cannot reject the argument that 166m *livres* per month could have been financed by a stable rate of inflation of 7 percent per month. This stable rate of inflation would have allowed enough revenue to finance the deficit. However, such a high rate of inflation was politically unacceptable: the *sans-culottes* of Paris, though supposedly fanatic supporters of the Revolution, were not ready to sacrifice their standard of living as much as this rate would have involved.

Cukierman (1988) has solved this paradox of a *de facto* rate of inflation higher than the optimal one, in a different way. Cukierman explains why it is not irrational for a government to have a higher inflation rate than the optimal one. The optimal inflation rate is one

[41] In fact, we have $GD = \Delta M/P + \Delta L/P + \Delta B/P$. $\Delta M/P$ is the part financed by the issue of *assignats* and is known as seigniorage; $\Delta B/P$ is the part financed by issue of debt; $\Delta L/P$ is the amount financed by the sale of church land. The public buys land, paying with *assignats*. This corresponds to an increase in ΔL and a decrease in ΔM shown in Table 1, ΔL and ΔB are small compared to ΔM, therefore, equation (1) is used during this period.

[42] Sargent (1981) shows that during hyperinflations adaptive expectations are not a big culprit, since "Cagan's adaptive expectations scheme is compatible with rational expectations"; p. 435.

that maximizes revenue in a steady state. However, during short periods, higher revenues can be obtained in a non-steady state situation, by increasing the rate of money creation all the time. The consequence is that the inflation rate is higher than the optimal inflation, π^*. "A government with a strong desire for immediate seigniorage does not necessarily act irrationally when it increases current seigniorage at the cost of higher inflation and lower future seigniorage." [43]

This explanation of the paradox can also apply to the hyperinflation during the French Revolution. If our loose estimates are not too far from reality, it means that the French government had higher inflation than the optimal one, but for a time also higher revenues, by constantly increasing the printing and the inflation rates. This policy was rational during the Reign of Terror and war.

The estimates presented in Table 7 do not allow us to differentiate between Cukierman's and Sargent's argument. If our point estimates are strongly biased downward, a steady-state inflation could have the amount of seigniorage needed. On the other hand, it could be true that an unsteady and runaway inflation was needed to get these high revenues collected during the years 1793-94. But, early in 1795, the real revenues which the inflation tax brought to government started to fall, its armies were destitute in 1795 and 1796, and only survived through plunder; there was runaway inflation and eventually complete collapse of the currency. However, during the Montagnard period, under pressure from the *sans-culottes*, the "lois du maximum" had been passed to stop the inflationary process. In the next section we analyze their effect on output and inflation.

4. Price Controls, Output, and Inflation.

Price controls relate to major war preparations in the same manner as printing money comes with high budget deficits. Price

[43] p. 452.

controls have often been tried during the course of history, but price controls during World War II are the best-known case and gave rise to much research. [44] The subject of debate was centred on their effectiveness as well as their negative consequences. Price controls are usually disrupting for commercial links and supply, as we show was the case during the French Revolution.

Regarding the Terror period, controls proved effective in stabilizing some prices, mainly of grain and some other basic commodities. During this period, farmers had their produce commandeered at maximum prices by the *armées révolutionnaires*, special forces intended for use against internal enemies of the Republic, which were composed of sometimes violent *sans-culottes*. Persons who hoarded food-stuffs and other transgressors could be subject to capital punishment, and a few were indeed executed; this could not but make an impression upon farmers, traders, and consumers.

As to the consequences of price controls during the Terror period, within one year of their promulgation, their effect on output became evident: "With requisitions, and maximum prices below market prices, supplies of commodities were increasingly withheld from the market." [45] As early as 1790 or 1791, some farmers had been reluctant to sell their produce for payment in a paper money which they distrusted. However, this withdrawal of supplies became general after the maximum was introduced. There is a mass of evidence about peasants deserting the town markets and selling at their farms to people who wanted food against specie or by barter against other products, such as wine, clothes, furniture, and watches. [46] Some iron masters, who were substantial businessmen, bartered iron against grain, which they gave to their workmen in lieu of wages. Another disruption came from the breakdown of transport, largely because horses and carts had been commandeered for the army, but also

[44] In 1793, the deficit at 1789 prices was 1994 million *livres;* it corresponds to 166m *livres* per month.
[45] p. 28.
[46] See Galbraith (1952), Pohlman (1972), and Rockoff (1984).

because carters refused payments at maximum prices and in *assignats*. In the autumn of 1793 many shopkeepers in Paris did not replenish their stocks of groceries or textiles, when they had been sold out, from fear of being charged with hoarding or being forced to sell at maximum prices. However, the worst was that farmers were so angry against the exactions of the *armées révolutionnaires* that, after the harvest of 1793, they ploughed and sowed far less than usual; they also killed many farm animals and ate them.[47] The result was the under-average crop of 1794, which created famine conditions. And in the autumn of 1794, the maximum laws were still in force, so that the same deficiency in tilling the soil occurred and therefore the 1795 harvest was again deficient. Montagnard policy was mortgaging the future and preparing the way for the famine of 1794-96, owing to a kind of go-slow strike by cultivators.

It is generally accepted that industry greatly suffered from the combination of the maximum laws and requisitions. Manufacturers were paid for goods which were commandeered at maximum prices, which were supposed to leave them a profit, but were much lower than those they would have fetched on a free market. Moreover, the government was a bad debtor, notorious for delayed payments; this was disastrous for its creditors when the currency was depreciating. The famous engineering works of the Périer brothers at Chaillot (Paris), which had supplied hundreds of fields guns for the Republic's armies, were almost bankrupted by delays in payments. Moreover, manufacturers found it difficult to get new supplies of raw materials at controlled prices and often had to buy on the black market. They also suffered because the maximum was much more strictly enforced for prices than for wages. So many firms made losses and part at least of their circulating capital was destroyed. This emerges from works about the woollen industry of Elbeuf and of Sedan, the paper industry of Charente, the miscellaneous industries of Dauphiné, and even the iron industry, despite large government orders for armaments.

A proof of the *dirigiste* system's failure is that the economy was

[47] Harris (1930), p. 160.

going from bad to worse just as the dictatorship of Robespierrre was at its zenith. Everywhere, including in Paris, food supplies were getting more scarce and more irregular in the spring of 1794. Richard Cobb, who is the best expert on these questions, considers that the *dirigisme* of the year II left French agriculture in a pitiful situation: two thirds of its livestock were gone, the output of grain had fallen by one third, most horses and carts had been taken away. It had created artificial shortages, as the harvest of 1793 had not actually been bad.

As for price controls, "at a minimum, their effect must be some malfunctioning of the economy; at a maximum, it might be chaos". [48] During the Terror period, their effect were so bad as to reduce output in some sectors by 30 percent. [49] The reasons why controls were so disrupting during the Terror period are of two kinds: the price controls *per se,* and the way they were designed.

The disrupting impact of price controls lies in their effects on the supply side: they necessarily decrease the efficiency of the economy compared to the corresponding *laissez-faire* system. On the other hand, in terms of its effects on consumption, an interventionist system is no different from *laissez-faire.* In both cases, consumption must decrease by the amount of the increase in government expenditures. [50]Under a system of *laissez-faire,* the decrease in consumption is brought about through an increase in prices (which reduces wealth). On the other hand, with fixed prices, consumption can only be decreased through direct intervention. Therefore, price controls throw markets into disequilibrium: money in excess supply, and goods in excess demand. They are accompanied by rationing rules and requisitions. These measures were deemed necessary during the Terror period to feed the army and the city of Paris: "all the newly-harvested crops were submitted to the requisition of the government for the use of the army". [51]

[48] For more details, see Crouzet (1993).
[49] In some places, there was also a shortage of seeds because too much grain had been requisitioned.
[50] Galbraith (1952), p. 3.
[51] See Harris (1930).

The other reason for such dysfunctionism, might be that the "lōls du maximum" were designed and put into effect in a particularly unfortunate manner: (i) prices were not merely frozen, but actually reduced, often below cost, leading to a contraction in supply; (ii) prices were fixed on a local basis, and disparities were such that some regions remained without a viable source of supply. [52] Pressure to lift controls began to mount. They were abolished in December 1794, while goverment deficits were still financed by the issue of *assignats*.

The effect of price controls on inflation was ambiguous. On one hand, they enabled the inflation rate to be low during 1793-94. [53] On the other hand, two additional sources of inflationary pressure caused by price controls were added to the seigniorage effect on inflation:

i) Capacity had been cut back because of the "lois du maximum".

ii) The economy was plagued by suppressed inflation caused by price controls, rationing, and excess supply in the money market.

The combined effect was probably to make the post-"lois du maximum" inflation rate higher than it would have been in the absence of controls. [54]

The price controls and associated interventionist policies wrought havoc on the French economy, disrupting markets and resulting in long-term losses in output and growth. However, they were a political necessity When faced with a choice between *dirigisme,* queues, and the disruption of markets on the one hand, and the market mechanism on the other, revolutionary governments have always opted for the former solution to please the working class.

[52] $Y + IM = C + G$; since output (Y) did not increase and imports (IM) were limited, an increase in government expenditures (G) leads to a reduction in consumption (C).
[53] Harris (1930), p. 152.
[54] The Convention was probably aware of their negative effects on supply, since it decided: "Les fabricants et les marchands en gros qui, depuis la loi du maximum, auraient cessé ou cesseraient leur fabrication et leur commerce seront traités comme personnes suspectes". Art. 7, project de décret, October 1793. ⌟

5. Conclusion.

Ideology has biased history's verdict on the effects of *assignats*. We have shown in this paper that inflation was inevitable, given the large increase in government expenditure during the war. Once it had been decided to go to war, to carry out the Revolutionary programme that included no debt repudiation and no new taxes, and to pursue a policy of autarky, economic choices were limited. [55] The only choice left for the government to escape its fiscal ills was the printing of paper-money.

We have also shown that the increase in the supply of *assignats* was the cause neither of the reduction in output, nor of the disruption in markets that took place during the Revolution. Most of the harm was caused by interventionist policies such as price controls. The members of the Convention made a political choice by bowing to the demands of the *sans-culottes* for a *moral economy* divorced from market principles. Though harmful, the decision is understandable, given the Montagnards' need for the support of the Parisian *sans-culottes*. [56] Revolution and *dirigisme* went hand-in-hand, because the former needed the latter to enlist the support of the poor.

To accuse *assignats* of being at the root of all that was wrong with the French economy is to evade the real issues, namely the decision to levy an army of 1.5 million men in a country where financial institutions, which should ease the process of channelling domestic savings, were inefficient or nonexistent. Credible financial institutions capable of tapping foreign sources of finance would also have eased the burden of providing, simultaneously, for consumption and for financing military adventures. [57] Part of the solution to high deficits

[55] The data on the inflation rate during the price controls period are biased, since we know that transactions which took place on the black market were not recorded. On the other hand, newspapers were not under control and their prices, nonetheless, did not increase.

[56] The inflation rate could be higher or lower than in the absence of controls, depending on the inflation and expected inflation path, which was derived from money demand.

[57] The strong revolutionary government of 1793-4 made no real attempt to increase taxation and to make tax collection more efficient.

lay in foreign countries carrying a portion of the burden through foreign debt or transfers. [58]

It was fundamental structural changes, not stop-gap measures, that were needed to solve the deficit problem. Had the system of debt and taxation been skilfully revamped early in the Revolution, there would have been no need for *assignats*. Had such schemes been in place before the Revolution erupted, there would probably not have been a debt problem or a Revolution. However, in the economic environment of this period, *assignats* permitted the Revolutionary programme to continue. Whether this programme to continue necessarily included war, is beyond the scope of this economic research.

All the countries which were involved in the Revolutionary and Napoleonic wars had to resort to paper-money, including Britain from 1797 onwards, and they all had inflation. However, France was the only one which issued paper-money on a massive scale early in the war and suffered from hyperinflation (in England, the paper-pound only depreciated by 25 percent and right at the end of the war period).

[58] At the beginning of 1793, they needed the support of the *sans-culottes* in their conflict for power against the Girondins. While later on, they feared to be outflanked on the left by the *enragés* and *hébertistes*.

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