



Federal Reserve Bank of Chicago

Chronicles of a Deflation Unforetold

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Abstract

Suppose the nominal money supply could be cut literally overnight by, say, 20%. What would happen to prices, wages, output? The answer can be found in 1720s France, where just such an experiment was carried out, repeatedly. Prices adjusted instantaneously and fully on one market only, that for foreign exchange. Prices on other markets (such as commodities) as well as prices of manufactured goods and industrial wages fell slowly, over many months, and not by the full amount of the nominal reduction. Coincidentally or not, the industrial sector (as represented by manufacturing of woolen cloths) experienced a contraction of 30%. When the government changed course and increased the nominal money supply overnight by 20%, prices responded much more, and the woolen industry rebounded.

Keywords: monetary policy, price and wage rigidities, deflation, recession (JEL E31, N13).

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Introduction

Lucas's (1996) Nobel lecture begins by tracing the two incompatible ideas of money's neutrality and non-neutrality to the origins of monetary theory, namely Hume (1752). Hume's essays exhibit the tension between the neutrality of money that seems "evident" to him, at least in a closed economy,¹ and his empirical observation that prices lag in response to increases in money, and therefore variations in the quantity of money can have real effects²: a tension that has remained, in the words of Lucas, "at the center of monetary theory" ever since.

Lucas notes that the manner in which money is increased matters, and that some of the manners envisaged by Hume³ can be ruled out as "a little magical" and unrealistic, for example, every man in Great Britain waking up one morning £5 slipped in his pocket. He also notes that it is hard to tell on what evidence Hume was basing his belief in short-run non-neutralities, aside from the writings of "one Mons. du Tot."⁴ As it turns out, those writings describe the consequences of a monetary experiment that was just as magical and unrealistic as Hume's, with the signal difference that it actually

¹"If we consider any one kingdom by itself, it is evident that the greater or lesser plenty of money is of no consequence; since prices of commodities are always proportion'd to the plenty of money" and later: "Tis indeed evident, that money is nothing but the representation of labour and commodities, and serves only as a method of rating or estimating them. Where coin is in greater plenty; as a greater quantity of it is then requir'd to represent the same quantity of goods; it can have no effect, either good or bad, taking a nation within itself: no more than it wou'd make any alteration on a merchant's books, if instead of the Arabian method of notation, which requires few characters, he shou'd make use of the Roman, which requires a great many." (Hume 1752, 41, 46). This, however, is a statement about steady states.

²"tho' the high price of commodities be a necessary consequence of the encrease of gold and silver, yet it follows not immediately upon that encrease, but some time is requir'd before the money circulate thro' the whole state, and make its effects be felt on all ranks of people" (Hume 1752, 47).

³To prove that the quantity of money has no effect on the interest rate, Hume asks us to "suppose that, by miracle, every man in Britain shou'd have five pounds slipt into his pocket in one night" (Hume 1752, 66).

⁴"And that the specie may encrease to a considerable pitch before it have this later effect appears, amongst other reasons, from the frequent operations of the French king on the money; where it was always found, that the augmenting the numerary value did not produce a proportional rise of the prices, at least for some time. [...] These facts I give upon the authority of Mons. de Tot in his *Reflections politiques*, an author of reputation" although not above all suspicion (Hume 1752, 49) The theoretical experiments Hume describes seem to involve changes in the physical stock of coins, whereas the French king's operations, as we shall see, did not always do so.

happened: the place and time was France in the 1720s.

For this to make sense, a word is needed on the French monetary system. Money took the form of gold and silver coins of various sizes and designs. None of these coins bore any indication of value, as coins do since the 19th century. Rather, the nominal value of coins was set by government decree, and could be changed, quite literally, overnight. Thus, for example, on the morning of September 22, 1724, every man in France woke up with 20% fewer units of account in his pocket. This bit of magic was just one in a sequences of decreases in the nominal value of coins engineered by the government of the time. The sequence amounted in total to a 50% reduction over a period of seven months in 1724.

The French writers cited by Hume (1752, 49), namely Melon (1736), Dutot ([1738] 1935), and Paris-Duverney (1740), had been either close observers of, or participants in, this policy. They published their views of the events in the 1730s. All three agreed that prices did not adjust immediately or fully to the decrease in nominal value of coins, and they also agreed that the French economy had undergone a sharp recession at the same time. They differed on the lessons to be drawn from the episode, opening up a debate on the uses and abuses of monetary policy that is still open today.

The purpose of this paper is to revisit the deflation of the 1720s.⁵ Its position in the genealogy of monetary economics is not the only motivation. The peculiar nature of the monetary system of the time, and the way in which the government used it, makes the experiment almost as unrealistic as those that have been used to understand monetary economics from Hume to Lucas. Moreover, by the standards of macroeconomic history, this experiment (perhaps the last of its kind) can be relatively well documented.

Of course, the monetary regime in place at the time was not the same as today. Instead of the fiat money that is usually studied, the currency was made of gold and silver. But one effect of the experiment, the overnight reduction in the nominal money supply, was exact and instantaneous. The reaction of prices to such an experiment is of great interest. It is often asserted that the behavior of inflation under a commodity standard is substantially different, in particular much less persistent, than under a fiat money regime (Alogoskoufis and Smith 1991, Bordo 1995).

The paper proceeds as follows. Section 2 provides some background on the institutions of the period to help the reader understand the nature of the evidence. Section 3 recounts the experiment itself and the debates that surrounded its execution. I survey

⁵This episode has been described before, although not recently (Babeau 1891, Marion 1913, Akabane 1967), and with little data. Antonetti (1990) studies the much less significant business crisis in Paris in 1729–31.

the qualitative evidence on its impact through contemporary reports in section 4, and present what quantitative evidence I have found, both on prices and on industrial output, in section 5.

Institutional background

A brief description of the institutions is necessary to better understand the source and nature of the documentary evidence I will provide.⁶

The organs of policy-making

France was at the time an absolute monarchy: the King had a God-given right to exercise the three powers (legislative, executive, and judiciary) that were theorized by the contemporary writer Montesquieu. There was no equivalent to the British parliament, at least not at the national level.

Policy was decided in a restricted cabinet to which few people had access. The king chose the members of the cabinet, which usually included the secretaries of state or ministers in charge of war, the navy, foreign affairs, home affairs, and public finances.⁷ This last was called the *contrôleur général* (whom I will usually call the finance minister).⁸ Ministers served at the king's pleasure and could be dismissed at any time. The cabinet took decisions by a majority after all opinions were expressed.⁹ Deliberations were secret, and no minutes were taken; and since the cabinet was not accountable to any public body, it is often difficult to know the reasons for which policies were adopted. Sometimes

⁶See Antoine (1970, 1978, 2003).

⁷During the period I study, there was a prime minister, which was somewhat unusual, since Louis XIV had abolished the position in 1661. Louis XV's reign had begun under the regency of the duke of Orléans. When the king came legally of age in February 1723, the regency ended but to ensure continuity, cardinal Dubois, foreign minister and confidant of the duke, had been made prime minister in August 1722, a sign that the king was not yet ready to govern by himself. At Dubois's death in August 1723, the duke of Orléans became prime minister, and when he died in December 1723, his cousin the duke of Bourbon followed him, until 1726.

⁸From September 1722 to June 1726, the finance minister was Dodun, previously a senior official in the ministry of finance.

⁹The king attended, but it was rare for him not to follow the majority. If he was displeased with policy, he replaced the ministers; while they were in place, they acted as they saw fit.

the preamble of a new law or decree would formulate those reasons; otherwise, we have to rely on what internal memos (usually anonymous) have survived in the archives.

One important institution for my topic is the *Conseil de Commerce* or Trade Council (Bonnassieux and Lelong 1900). Created in 1700, it was composed of bureaucrats of the finance ministry, the lieutenant of police of Paris (who was in charge of the administration of the capital), and twelve delegates chosen by the business communities of the main commercial cities of the realm. These businessmen (bankers, traders, merchants) were regularly asked to provide their input on the matters that came before the council. The council did not have any authority to take decisions on its own, but referred its recommendations to the finance minister. The council centralized the collection of information about the state of the economy, and its archives, remarkably preserved, represent a major source for this study.

One of the competencies of the finance minister was supervision of manufactures and commerce. Since the time of the finance minister Colbert (1661 to 1683), French manufactures, specifically woolens and linens, were closely regulated, in the following way. Each type of cloth, produced in each town or small region of France, had to be produced to a certain standard. To enforce the standard, the bolts of cloths were submitted to an inspection process, which became more stringent over time. The first inspection was done at the local level by representatives of the manufacturing guilds or corporations, but they were supervised by government-appointed inspectors. These inspectors reported regularly to the government (via the Trade Council) on developments in manufacturing in their area. There were roughly as many inspectors as there were intendances, or administrative districts, about thirty (see Minard 1998 and 2000 on the inspectors). Beginning in January 1714, the inspectors were required to provide semi-annual reports on the manufactures in their districts (Gille 1980, 92–93), some of which have survived (see Appendix A).

The main purpose of the regulatory system was to enforce standards of quality, not to control output or prices. The inspectors could fine producers who failed to meet the standards. Bolts of cloth that passed the inspection received a small lead seal affixed to one end of the bolt.

The industrial organization of the manufactures was relatively simple. The producers, or *fabricants*, owned and operated the looms. The raw materials was bought either by them or by an merchant-entrepreneur; labor was hired to process the raw materials (mainly wool), spin it, and weave it. The producer returned or sold the finished cloth to the merchant who sold it either directly to retailers (*marchands-drapiers*) or at cloth

markets in the main cities, or else at the regional fairs that took place annually in various parts of France.¹⁰ The price data that I present was collected at all stages: factory gate, fair, cloth market and retail shops.

Monetary regime

The monetary system in France at the time was a commodity money system. The medium of exchange consisted mainly of gold and silver coins.¹¹ Aside from two brief episodes (the *billets de monnaie* in 1703–07 and the bank notes of John Law's System in 1716–20), there was no paper money or any form of circulating bank liabilities. However, a commodity money system consists of two distinct elements: the circulating medium (coins) and the unit of account, in this instance the livre (L) or franc. The key feature of coinage before the 19th century is that coins bore no indication of face value: the face value, or more generally the relation between coins and unit of account, was set by the government at will.

Gold and silver was freely minted, meaning that the government-sanctioned mints were at all times open to mint unlimited quantities of precious metal, either in the form of old coins, foreign coins, or bullion, into coins of the realm (the only legal tender). The mints offered a mint price (MP), expressed in units of account per pound of metal, and paid in new coins. Thus, the physical quantity of money was determined not by the government, but by the private sector through its minting and melting decisions.

The government determined the parameters of the system. One set consisted in the coin specifications: size, weight, fineness and design of each coin. This was done by royal edicts. Another set of parameters consisted in the legal tender, or current values, assigned to each coin, expressed in the unit of account. This was done by a decree known as *arrêt du conseil* (hereafter AC). For a given coin, one can calculate the mint equivalent (ME), which is the number of units of account per weight of standard metal contained in the coins (Glassman and Redish 1988).¹² Different denominations of a given metal (gold or silver) always had the same mint equivalent: that is, all silver and gold coins were full-bodied, and it is sufficient to keep track of the gold ME and

¹⁰See Thomson (1982), Gayot (1998) on the textile industry.

¹¹There were also billon (20% silver, but slightly overvalued) and copper small denominations, both minted on government account and with legal tender limited to 6L since 1719. They were reduced once, in April 1724, by 25%.

¹²The unit of weight, which I will use because it makes for round numbers, was the *marc* (mark) or half-pound (244.8g), and the standard fineness was 22 carats for gold and 11/12 for silver.

the silver ME. The ratio between the two is called the gold-silver ratio. Finally, the government also set the mint prices. This was done by publishing an official tariff or price list.

The fact that a coin was assigned a legal tender value of N meant that it could be tendered to discharge a (nominal) debt in the amount of N . All gold and silver coins (except for a brief period in 1719–20) were unlimited legal tender for all debts. It was possible to denominate debts in coins of a specific date, but commonly domestic bills of exchange and other commercial bills were denominated in units of account, as were long-term forms of debt (including the government's). Foreign bills of exchange drawn on France were denominated in units of account (specifically, in écu of 3 livres), and were always payable in the current coins at their current legal value.

Several operations could take place. One was a reminting: an edict was passed announcing new coins types, with distinct designs, and (possibly new) weight and fineness. Typically, the existing coins were demonetized, that is, lost their legal tender value after a certain grace period, although they could always be sold to the mint for new coins at the official mint price. A variant of this was a reformation: the new coin type had same weight and fineness, and the existing coins were restamped by the mint with a new design, in exchange for a fee. Unreformed coins were, in principle, demonetized after a grace period.

Another operation consisted in simply changing the legal tender values of existing coins, without altering the coins or reminting them. A new AC was published, announcing the new legal tender values. If the face value of coins was lowered, this was called a *diminution*; if it was increased, it was an *augmentation*.

Figure 1 plots the mint equivalent and the mint price in France from 1685 to 1730. The gap between the two lines measures the seigniorage tax.

The monetary policy that concerns us here, between 1723 and 1726, consisted in a series of (mostly unforetold) diminutions from 1723 to 1726, followed by one augmentation in 1726. The effect of a diminution (augmentation) of $x\%$ is instantaneously to reduce (increase) the nominal money supply by $x\%$ on the appointed date.

Policy in the 1720s: a narrative

A brief account of the monetary policy runs as follows: after the collapse of John Law's System in 1720, the government left the coinage at the high nominal level at which

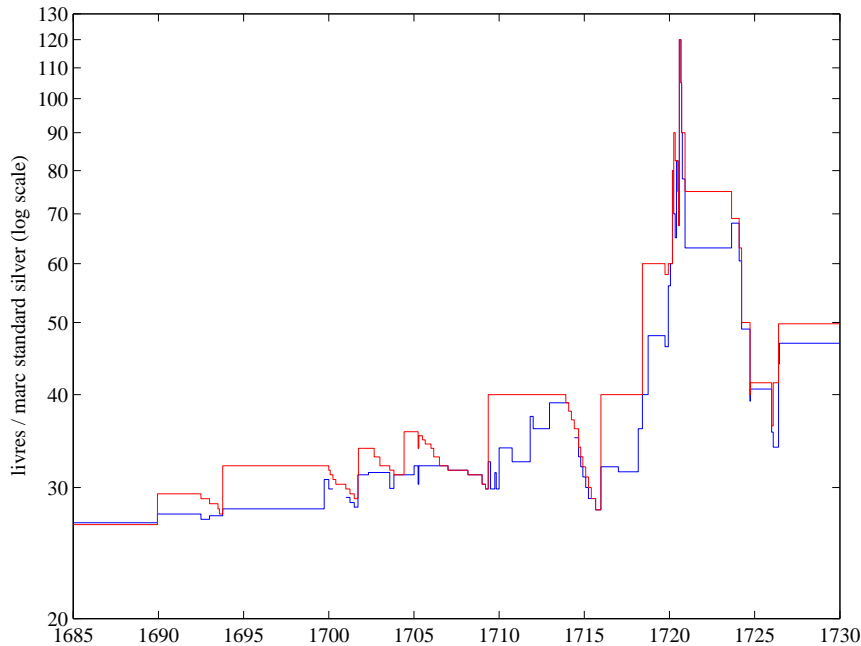


Figure 1: Mint equivalent (red, upper line) and mint price (blue, lower line), France, 1685–1730 (log scale).

it had been raised by Law. Once more pressing problems were dealt with, it turned to the currency. A minor adjustment in the gold-silver ratio in July 1723 was followed by a small diminution in August of the same year. The main diminutions took place in February, April and (announced to be the last) September 1724. By late 1725, the government pressed for funds decided on a reminting operation to generate seigniorage, carried out in February 1726. Then, in a complete reversal, an augmentation took place in May 1726. The government was dismissed by the king in June 1726. No further manipulations took place.

The immediate background

France between 1715 and 1726 was in a period of turmoil. The major event of that decade was John Law's System, an attempt at radical reform of French public finance, including the introduction of fiat money (Velde 2003). The System collapsed in inflation in 1720, and the period from 1721 to 1723 was devoted to reconstructing the fiscal system, salvaging Law's Indies Company as a commercial concern, and liquidating the public

debt.

Monetary policy from 1723 to 1726

In 1689, the marc of silver stood at 26.75L. For 25 years it moved up and down (Figure 1) but by 1715, at the death of Louis XIV, it had returned close to that level (see Table 1 for a chronological account of the mint price and mint equivalent of silver). From December 1715 the ME rose again, to peak at 120L in July 1720. The decree of July 30, 1720 had programmed a gradual fall to 60 livres; this was postponed in September when a new coinage was launched, but resumed by decree of October 24 “for the benefit of trade and to reduce the price of foodstuffs.” The new (reformed) coins were set to fall from 9L to 7.5L on December 1, and to 6L on January 1, 1721 (corresponding to a ME of 60). The first decrease took place as scheduled on December 1, but the second one was postponed at the last minute on December 26 by the successor of John Law as minister of finance, ostensibly to allow taxpayers to continue to pay their obligations in coin at the existing rate. According to Paris-Duverney (1740, 2:321), “at a time when the System had made almost all the currency disappear from the realm, and the collection of the king’s taxes and revenues was weak and languishing, there was no way to reduce the value of specie and forgo the profit from restamping coins.” The unreformed coins were scheduled to be demonetized on February 1, 1721, but this was later postponed indefinitely, and they were to remain legal tender for taxes until the first subsequent diminution (AC March 4, 1721).

For several years, monetary reform was off the table as the government faced far more pressing issues, like the liquidation of the debt. By 1723, most of the issues had been resolved. The Indies Company had been taken out of the business of government finances and it had emerged from receivership as a going commercial concern in March. The Visa operation, which reconstituted the national debt in the form of nominal bonds, was completed. The government turned its attention back to the currency.

The first measure, published on July 21, 1723, concerned only the gold coinage, and the face value of gold coins was lowered from 45 livres to 44 livres, a 2.2% reduction. The reason for the change is stated in a letter of July 20 from the prime minister, cardinal Dubois, to the regent: he had spent the previous day discussing with the finance minister “the means to remedy as much as possible the disorder caused by the scarcity of white [silver] currency which creates such perturbations in trade that a great scandal would

Date	MP	ME	Date	MP	ME	Date	MP	ME
1 Sep 1715	28	28	6 Mar 1720	80	80	1 Dec 1720	63	75
23 Dec 1715	32	40	1 Apr 1720	70	90	23 Aug 1723	68	69
1 Feb 1716	32	40	1 May 1720	65	82.5	11 Feb 1724	60.5	63
1 Jan 1717	31.5	40	29 May 1720	82.5	82.5	4 Apr 1724	49	50
3 Mar 1718	36	40	1 Jul 1720	75	75	22 Sep 1724	39.2	40
31 May 1718	40	60	16 Jul 1720	67.5	67.5	26 Sep 1724	40.7	41.5
1 Oct 1718	48	60	31 Jul 1720	120	120	1 Jan 1726	35.6	36.3
28 Sep 1719	46.4	58	1 Sep 1720	105	105	1 Feb 1726	34	41.5
8 Dec 1719	56	60	16 Sep 1720	90	90	27 May 1726	44	49.8
23 Jan 1720	60	60	1 Oct 1720	78	90	18 Jun 1726	46.9	49.8

Table 1: Mint prices and mint equivalents of the silver coinage, in livres per marc of silver 11/12 fine. Sources: original decrees at <http://www.ordonnances.org/>.

arise if it weren't remedied immediately to the greatest extent."¹³ This explanation is also given in the preamble of the decree, which mentions the excessive abundance of gold coins in trade and the problems they create for the payment of small sums, and which is attributed to a misalignment with the gold-silver ratio in the rest of Europe. In March 1723, there were already reports of scarcity of silver coins in the border provinces and in Paris, and in June 1723 concern about the abundance of false coins at the Beaucaire fair.¹⁴ The reduction of July 1723 was therefore mainly an adjustment of the gold-silver ratio which had stood at 15 since 1705 (except between 1710 and 1712) and was now lowered to 14.67. Of course, the adjustment could have been made by raising silver coins rather than lowering gold coins, but the government chose the latter because it was already thinking that the price of coins was too high (Paris-Duverney 1740, 2:323).

But there is further evidence that a deflation was already being planned. When Dubois became prime minister in August 1722, he wrote down a list of policies to carry out, including "settle the project on currency to restore order in trade, put the troops in a position where they can be paid in peacetime or wartime without affecting the king's current revenues or commerce"; he further noted that "the morale of the troops is poor today, nor is it as it should be [...] because of the excessive value of the coinage which makes subsistence difficult." More explicitly, a request by the managers of the postal

¹³Affaires étrangères, Mémoires et Documents (hereafter AE M&D), France 1256, f. 20.

¹⁴Archives Nationales (hereafter AN) E3564, fol. 56, fol. 517.

service on July 25 1723 to increase their rates was approved by the Council, but with a remark that, although prices were indeed high, “there is good reason to hope that this dearness will decrease by the measures that will be taken” and the rate increase was only granted for one year.¹⁵

The diminution of August 1723

A month later, the government decreed a mandatory recoinage of gold coins: new coins were produced, of smaller size, with face value of 27 livres, reducing the mint equivalent of gold by 8%. The reason for this decision was the legacy of the last reformation of 1720, which had introduced different values for unreformed and reformed coins (36 and 45 livres respectively) and raised the seigniorage rate to 14%, resulting in considerable amounts of counterfeiting.¹⁶

All gold coins now had the same value, and the seigniorage rate on gold was lowered to 1.58%, enough to cover the production costs only. The same measure was taken for the silver coinage, which also consisted of a mix of unreformed and reformed coins (the former rated at 7.5 livres, the latter taken at 6.3L at the mints and in payment of taxes). The seigniorage rate was lowered from 16% to 1.45%, and the legal value of existing silver coins (both reformed and unreformed) was made equal. But it was now set at 6.9 livres, an increase of 10% for the unreformed coins but a reduction of 8% for the reformed coins. This was the first, small step in what became a drastic process of reduction of the value of coinage, and only a vague motivation (that the diminution on silver coins was “suitable for trade”) was given at the time.

Diminutions in 1724

Three more reductions took place in 1724: on February 11 (dated February 4), April 4 (dated March 27), and September 22.¹⁷ They brought the silver coin from 6.9 livres to

¹⁵AE M&D France 1252, fol. 78v, 80v; AN E3564 fol. 258.

¹⁶A monetary reformation was an operation whereby the nominal value of coins was increased, but coin-holders had to have the coin restamped (reformed) to avail themselves of the increase, with payment of a mandatory fee. During the operation, the unreformed coins were given a temporary legal value. This type of operation, whose purpose was to tax the whole money stock, was first introduced in 1689; the 1720 reformation was the last. A more common variant of the reformation was recoinage: a new type of coin is introduced and the old coins are demonetized.

¹⁷The date of the arrêt du conseil differs from the date of publication because of the delays in sending the information to the various provinces (it took ten days for a letter to reach Perpignan from Paris).

date	écu's value	diminution	cumulative diminution
	7.5		
Aug 1723	6.9	-8.0%	-8.0%
Feb 1724	6.3	-8.7%	-16.0%
Apr 1724	5	-20.6%	-33.3%
Sep 1724	4	-20.0%	-46.7%
recoinage			-44.7%

Table 2: Changes in the legal tender value of the main silver coin (the écu) in 1723–24, with the percentage diminution and cumulative diminution.

6.3 livres, 5 livres, and 4 livres successively (see Table 2). The gold coin was similarly lowered from 27 livres to 24, 20, and 16 livres. Since the reductions were not quite proportional for gold and silver, the gold-silver ratio was thus changed from 14.67 to 14.28, 15, and finally 14.46 (the ratio that would prevail in France until 1785).

The second reduction was published on the morning of April 4. The preamble of the arrêt offers no rationale whatsoever, but the same day, the finance minister Dodun wrote to all the intendants a letter to be made public.¹⁸ The minister explained that the cumulative reduction in coin value had by now reached a third, and the public ought to see the benefit of this reduction in lower prices. This had not yet happened “because merchants and workers, foreseeing that other reductions might happen, used this pretext to increase prices rather than reduce them.” But coins were now at a rate destined to remain “for a long time if not forever, the public has no reason to fear further reductions for now” and all prices and wages ought now to return to the level they had

At each diminution, the government carefully calculated, given the postal schedules, when to send the letters to the intendants so that the announcement would appear within a window of two or three days everywhere in France. Although the text of the decrees explicitly stated that they entered in force from the day of publication, the difference between the date of the decree and the date of publication gave rise to some disputes. For the September diminution, therefore, the government post-dated the decree to September 22 and started mailing copies to the most remote provinces on September 14. This confused some intendants who hesitated to accept as valid a document dated in the future. Finally, for the May 1726 augmentation the government resorted to specially hired couriers. To ensure secrecy, each time the minutes of the decree were sent to the royal press at night and the typesetters were kept locked up inside the shop until the text had been issued to the street-hawkers the following morning (AN G/7/1472).

¹⁸AN G/7/31, letters to the intendants of April 4, 1724.

before Law's fiat money.

Dodun further pointed out that the increase in coin value of May 1718 had not resulted in a noticeable increase in prices and wages until December 1719, and although coins were $\frac{1}{6}$ less, prices were three times higher (a statement that seems somewhat exaggerated). Thus, the relative size of reductions since July 1723 was a third, but he expected an even greater than proportional effect since various other factors leading to high prices were not acting anymore. One industry singled out for the excessive price of its output was iron, which had been exporting a lot, and the minister was counting on reduced demand from abroad after the exchange rate appreciation to bring prices down in that sector. Conversely, French industries relying on imported raw materials should be able to pay a better price. A few other factors were expected to help bring down prices: scarce fodder had driven up transportation costs in the previous year, but that was not expected to last in the coming year. Next, wages were to fall, and to ensure this the intendants were to discourage any collusive attempts on the part of workers to maintain high wages (see below). Then manufacturers should have to lower their prices, and consequently retailers. The losses they would incur on their stocks would be compensated by the high prices they had been enjoying previously. As for domestic bills, they were mostly indexed (payable at the rate prevailing when they were issued).

The last reduction of 1724 was published on September 22. It was announced as the last. As will be shown later, the government had come to regret the uncertainty that it had let linger over the possibility of future reductions at the previous move.

It was followed a few days later (on September 26) by an edict announcing a recoinage. The purpose here was not to change anything to the nominal value of money. The recoinage had two stated objectives. One was to adjust again the gold-silver ratio slightly to 14.5, in response to the market ratio in England and the Netherlands, and to the growing quantity of gold in circulation in Europe. To do this without altering the gold coinage required a corresponding slight increase in the mint equivalent of silver, from 40L per marc to 41.5L per marc. The other objective was to remedy a side effect of the diminutions, namely the inconvenient denomination structure. When the *écu* was at 6L, it was natural to coin lower denominations of $\frac{1}{3}$, $\frac{1}{6}$ and $\frac{1}{12}$ of an *écu*. With the *écu* at 4L, these fractions were unsuitable, and the new coinage took the form of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{16}$ of an *écu*. The very fact that the government was bothering with such details suggested that the new face value of the *écu* was intended as permanent.¹⁹ To allay suspicions that the recoinage was driven by fiscal considerations, it was announced

¹⁹This point made by the intendant of Caen to the merchants of his district (AN G/7/220, n. 177).

that henceforth seigniorage on silver will be only high enough to cover production costs and in any case never exceed 2%. The slight increase in the ME of silver allowed to cover production costs and still leave a nominal inducement for recoinage.²⁰

An edict being a more solemn document (and one subject to registration in all the superior courts, or parlements, of the realm), it was an appropriate occasion for an official statement on monetary policy, worth quoting in full:

“Nothing has seemed more important to us for the general welfare of our State than to set a certain and unchanging value of our moneys, on the basis of which our subjects and foreigners could contract safely, and which could serve as a certain rule for the determination of foreign exchange and the prices of commodities and goods. The considerable increases in the value of coins to which we have been compelled by circumstances, and the need to return them to the value that seems appropriate through successive reductions, have prevented us until now from achieving this goal. We have even allowed, since the last reduction ordered on March 27 last, a considerable amount of time to pass until we might be in a position to decide, knowledgeably and on the basis of our own experience, whether it was appropriate to set the price of coins at the value which they had reached after the last reduction, or to reduce them further, and if so to what extent. And after having examined in our Council the various memoranda given to us on this point, it has seemed to us that after a considerable increase in the value of coins, when a whole nation has contracted for a long time on the basis of a valuation much higher than before, and when manufactures and trade have settled themselves on such a value, it is very dangerous if not impossible to return to the earlier value. The example of the past shows it, since the marc of coined silver was brought progressively to the value of 27 livres only through successive increases, after which it was always necessary to keep coins at a higher value than they had previously. The experience of what happened in 1715 and all the other instances when it was attempted to return to the old valuation conclusively shows that it would be harmful to follow such a course. We have therefore believed that we should take a proportion that could reconcile as much as possible the various interests in play; and we have not found one better than that of 16

²⁰See a memo from September 1724, along with drafts of the decree, in AN G/7/1876.

livres for the current gold louis, and 4 livres for the écu that will be coined pursuant to this present Edict, since we reduce thereby the value coins by almost half from what they were worth for several years and set them at a rate roughly equal to that which they had for a good part of our reign, and even under the reign of our predecessor, and since there was no appreciable increase in the prices of commodities and goods when they were at that rate.”

To reinforce the message, the finance minister again sent a letter to the intendants for publication.²¹ The letter begins by providing some explanations on recent policy. The reduction in prices and wages had not taken place as expected, because of the public’s conviction that another reduction in the value of coins would be necessary. It had not been possible to dispel this notion because the king and the duke of Bourbon wanted to observe the effect of the March reduction first before making a decision on further reductions; as a result, six months elapsed without making any decisions about the currency, “which is quite a long time in such a pressing matter,” acknowledged Dodun; “but experience has shown us that the prices of commodities and goods is influenced less by the value of coins than by the fear of an impending reduction on coins and uncertainty over their future value, and this same fear and uncertainty would persist and prevent the previous reductions from having their effect until His Majesty had clearly explained himself on this matter.” The value of coins announced in the Edict of September was therefore to be the final and permanent value. The letter then justified this level by reference to the past. This was the value that had prevailed from May 1709 to September 1713, in consequence of a reformation edict, but at the time prices and wages had been reasonable and similar to what they had been earlier. A deflationary program then followed from September 1713 to September 1715, but it was reversed in December 1715, and the level (40 livres per marc) prevailed again from December 1715 to May 1718, again without noticeable increase in prices and wages; and even the reformation of May 1718 which had increased the value of coinage by 50% had not produced much inflation except for a few goods. Consequently, the level of prices and wages of the years 1709–10 and 1716–17 should henceforth serve as a reference when assessing whether prices and wages were excessive relative to the new level of coins. Dodun insisted that prices should fall to this reference level, that is, by more than the cumulative diminution of coins.

²¹Bibliothèque nationale (hereafter BN) Fr 8362, f. 99; see also AN G/7/33.

Policy to 1726

After September 1724, the government was committed to making no further changes in the currency. All it could do was wait for prices and wages to fall. In the meantime, however, two crises developed in 1725, one international and one domestic.

The risk of war increased considerably in April 1725 for particular reasons.²² It was decided to increase troop levels and begin furnishing warehouses on the borders in preparation for a possible conflict. The expenses of a potential war would likely require borrowing, and the government was convinced that punctual servicing of the debt was insufficient, and that a program to begin reimbursing it was required.²³ To this end a new tax imitated from the Dutch, the Fiftieth, was levied in June 1725 for twelve years. Its expected income of 10 to 12 millions was to be devoted to reimbursing the debt; every year, the funds assigned to service debt that had been reimbursed would be devoted to further reimbursements, a sinking fund formula sixty years before Dr. Price and Pitt. But tax increases are never popular, and the government was blamed for having needlessly provoked an international crisis.

The domestic crisis was a harvest shortfall in northern France, due to continual rains from April to September 1725 and following a mediocre harvest in the three previous years. A riot just outside Paris on July 9 alerted the government to the dangers of the situation,²⁴ and much effort was made in the summer and fall to supply Paris with grains bought in the provinces or abroad, at the expense if need be of the provinces. The price of wheat and bread spiked sharply in that period but returned to normal by the winter. The public mood, however, remained sour; the government was blamed for the dearth of bread and accused of having conspired it in order to profit from the people's

²²In 1721, to cement the alliance with Spain, the French king Louis XV had been engaged to the daughter of the king of Spain. But she was much younger than him, and he a teenager with fragile health. As it happened, his nearest genealogical heir was the king of Spain, who had renounced his rights to the French throne but was known to consider that renunciation of little value. Should Louis XV die without heir, a Spanish invasion and a civil war in France was likely. The duke of Bourbon decided to break the engagement and marry the king to a Polish princess. The move infuriated Spain who immediately made an offensive alliance with Austria. In 1725 and 1726, war seemed probable.

²³See Paris-Duverney's memoir in the *Gazette d'Amsterdam*; also a commentary on a budget plan of December 1725: "when the State's credit is restored, everything is easy and everyone is satisfied, the realm is feared and peace is reinforced . . . to restore one's credit is the best way to peace, *si vis pacem para bellum*" (AE M&D France 1258, fol. 54v).

²⁴Two rioters were expeditiously hanged as an example. This forceful reaction contrasts with the more cautious approach taken with striking workers.

misery. Evidence of government agents engaging in grain purchases only seemed to confirm these rumors (Kaplan 1985).

At this point, the budget was still not in balance and unpaid arrears from previous years were accumulating, particularly on the debt. The fiscal pressure became enough to push the government into the kinds of operations it had foresworn. In emergencies, taxing the money supply was usually a relatively rapid way to raise funds; it was also reasonably equitable (compared to the available alternatives), taxing as it did cash holdings proportionally. The normal process, a recoinage, involved raising the mint equivalent, so that individuals would receive no less in nominal value than they turned in when exchanging old for new coins, but the government could collect seigniorage. But the government did not wish to lose the hard-won fall in prices it had (partially) achieved, so it proceeded to lower the value of coins even further, before recoinage back to the same ME.²⁵

On December 4, 1725, it was announced that gold coins would fall from 16L to 14L on January 1 and to 12L on February 1; and silver écus from 4L to 3.5L and 3L on the same dates. This diminution was, therefore, pre-announced. By January, however, rumors of an impending recoinage were rife, particularly after the government ordered all tax receivers and treasurers to turn over all their spare cash to the mints.²⁶ The government was fully aware that the impending recoinage could not be kept secret, but it instructed the intendants to let the public guess without confirming anything except a firm promise that, should any recoinage take place, it would not raise the ME higher than it had been until December 1725.²⁷ Individuals started buying foreign exchange to hedge against the feared recoinage; the government secretly intervened on the market to keep up the price of foreign currencies high, so as to make the hedge unprofitable.²⁸ On February 1, the diminution took place as scheduled, but three days later an edict appeared ordering a general recoinage of silver and gold. New, lighter écus were to be minted and circulate at 5L (with fractions at 2.5L, 1L, 0.5L and 0.25L), the existing écus would circulate for another six months before demonetization. The seigniorage tax was

²⁵As early as October 1724, rumors of war had led some to believe that the true purpose of the deflationary policy was to allow for such an operation in time of need (letter of the intendant in Bourges, AN G/7/188, n. 488).

²⁶BN Fr 8364, fol. 323; Fr 8365, fol. 35; Fr 8384, fol. 12.

²⁷BN Fr 8365, fol. 27-28.

²⁸The Paris brothers, who did not approve of the policy, were charged with carrying out this market intervention, and they were quite successful. They explained the details of the intervention in a manuscript (AN KK959).

18%.

The credibility of the government's monetary policy was, of course, in ruins. There was growing dissatisfaction at the court with the duc de Bourbon's ministry, and the king was approached. He was by now sixteen years old, and felt ready to take matters into his own hands. The ministry, meanwhile, took a final, desperate measure, and on May 27 a decree raised the value of the newly minted gold and silver coinage by 20%, without any tax. There is no direct evidence on the motivation for this move, but it is likely that the same arguments were made by the business community as in 1715 and 1716 for the need to increase the nominal value of coins so as to stimulate economic activity. The measure came too late to save the ministry; Louis XV had arranged in utmost secrecy for the dismissal of his prime minister, which took place on June 11, 1726. The new finance minister, Le Peletier des Forts, immediately announced that he would return to the sound practices of the time of the great Colbert.²⁹ The last monetary measure of the previous government had been to lower the seigniorage rate to 5.8% (it was promulgated after its fall, on June 18). Thereafter, the French currency was not altered (except for an adjustment to the gold-silver ratio) until the French Revolution.

Why a deflationary policy?

As I have already explained, the motivations of the government in pursuing the deflationary policy are not easy to ascertain from the available documents.

The fiscal cost

When it embarked on its deflationary policy, the government was not unaware of the costs, although it may have underestimated them. The experience of the business contraction of 1715–16, which was widely attributed to the similar (but pre-announced) deflation of 1713–15, was recent enough; and the government knew that fiscal revenues would suffer in a recession. A budget plan drawn in August 1724 expects the largest loss among indirect taxes on tariffs: because of lower exports, revenues from tariffs were expected to fall by a quarter.³⁰

But there were more direct costs to the government, namely capital losses on the balances held by tax collectors and treasurers at the time of the diminution, for which the king was responsible. During the last series of diminutions from 1713 to 1715, the

²⁹ BN, NAF 2560, fol. 7. See Velde (2006) for the other far-reaching changes in fiscal policy.

³⁰BN Fr 7771, fol. 87v, 92r.

loss had totalled 100 millions. In 1724, it came to 34.8 millions, reducing revenues from 222 millions to 187 millions.³¹ The higher losses in the previous diminutions were due to the fact that the treasurers' obligations to the government were in units of account. If no distinction was made between the coins they had received before the reduction and those received after, it was very tempting for them to claim that the coins received after (at the lower value) had been received before (at the higher value), allowing them to discharge their obligations at a profit. This may have been a major motivation for not announcing the diminutions. Furthermore, measures were taken to prevent the fraud: on the morning of each diminution, on orders of the finance minister, government officials throughout France immediately visited all the treasurers and tax collectors to inventory their cash holdings and close their accounts.³²

Reasons for

Why did the government doggedly pursue this deflationary policy in spite of such high costs? Why did it feel important to reduce the value of money? The lack of documentation makes it difficult to answer precisely the question, but here are the elements I have been able to find.³³

As mentioned above, the desire to return to a lower price level was apparent as early as 1720. It was consistent with monetary policy since 1689: whenever the nominal value of coins was increased as part of a reformation, the government after a few years attempted to return to the earlier level, although it was not unaware of the costs involved.³⁴

One of the main motivations for wishing to bring down prices stemmed from difficulties with the payment of troops, mentioned above. As of 1722, the morale of the troops was low, their pay was in arrears and was insufficient given the cost of living. But France needed to be ready for war, as explained above.³⁵

³¹BN NAF 22245, fol. 365.

³²AN G/7/31/104.

³³The duke of Bourbon's papers have all but disappeared, probably during the Revolution. Neither he nor Dodun left any memoirs or papers. Moreover, the ministry of the duke of Bourbon has attracted little interest among historians: there is no biography of the duke of Bourbon, the only study of his ministry (Dureng 1911) focuses on the relation with Great Britain. The Paris brothers have left some writings, but they were not the primary decision-makers.

³⁴See a memorandum of 1692 (AN G/7/1392, n. 25) and one of 1705 (AN G/7/1468, reg. I, fol. 240) discussing the pros and cons of such a policy.

³⁵Melon wrote soon after that "no one is unaware that the woes of the previous cabinet [the duke of

The clearest contemporary explanation for the deflationary policy can be found in a memorandum, commonly attributed to Paris-Duverney, widely circulated at the time and published in August 1725 in the *Gazette d'Amsterdam*.³⁶ The memorandum argues that the diminutions were “necessary to remedy the ills that the high value of specie had long been causing through the excessive cost of wares, foodstuffs and labor; to allow the troops to feed and clothe themselves with their salaries, which they couldn’t do so that one could not find soldiers in a realm so plentiful in men; and to be just to the creditors of the State who, by virtue of the reduction of annuities and offices from 4 and 5% to 2 and 2.5% did not truly receive 1% on the loans they had made at 30L to the mark to support the late king in the long and difficult wars he had to endure. Determined by such compelling reasons, the government therefore reduced the coined mark of silver to 41.5L.”

The concern for creditors of the State (and, to the degree that soldiers’ wages were fixed in nominal terms, they were part of the broad category of nominal creditors of the State) is rather surprising, given France’s poor reputation as a debtor in the eighteenth century. The policy of deflation amounted to an “anti-default.” This may have been prompted by political considerations, although, given that the creditors of the State after the collapse of John Law’s system numbered half a million (out of a population of twenty millions) it is not easy to identify the creditors of the State with any well-defined interest group or social category. Another concern was probably the State’s reputation as a lender. In the same document, Paris-Duverney justifies the creation of a sinking fund to reimburse the debt, financed by a new tax, in the following words: “The more one has given examples of behavior inimical to trust, the more the government needs to exert care and punctuality in its promises to rekindle this precious trust, so as to make a moderate use of it to the benefit of the State when it becomes necessary to ensure its conservation.” With the looming European war, it was seen as necessary to make it possible for the government to return to capital markets with an enhanced reputation.

Paris-Duverney acknowledged the effects of deflation: “The reduction of coins has made money vanish from trade and cut off circulation; this is a normal result of coin

Bourbon’s] came in part from the imprudent diminution of coinage, and the fear of war that was its pretext or its reason should have led to the opposite policy” (Arsenal 3857, fol. 466-470).

³⁶This French-language newspaper printed in Amsterdam was read throughout Europe. Copies of the memorandum can be found in BN Clairambault 529, 519-528; AE M&D France 1258, f. 61-67, where it is dated June 1725; and attributed to Paris-Duverney; Arsenal 3857 fol. 512-525; AN K884, n. 48, f. 229-242. Paris-Duverney, one of the influential Paris brothers (Velde 2006), was a close adviser of the duke of Bourbon.

diminutions for a while . . . the further away from the time of the diminutions, the more circulation regains strength by itself, and the government helps it presently since it fosters contracting between private parties by allowing again interest rates at 5%, thus one may hope with reason that money will day by day become less scarce.”

During the controversy of the 1730s that Hume cited, Paris-Duverney justified again the policies of the cabinet, albeit retrospectively (Paris-Duverney 1740, 2:326–400). He admitted that the value of currency should not be altered, once it is well established. But he claimed that it was not well established in 1723, because of the disruptions of the System. Law himself, in March 1720, had begun a policy to reduce the marc to 30L. The government in 1723 did not intend to go as far, but only to follow what had always been the practice before. It had been forced to wait until France remonetized itself after the collapse of the paper currency in 1720. The economy had recovered, but in the process the prices of foodstuffs, merchandise and labor had risen too far. He conceded that diminutions had undesirable effects (he mentioned scarcity of currency, falling tax revenues, and slowing trade), but they were transitory. Examining the diminutions themselves, Paris Duverney observed that the foreign exchange had become favorable for France after the diminutions of August 1723 and February 1724, as Dutot himself had noted. Duverney attributed this to the fact that, contrary to the diminutions of 1713–15, the most recent ones had not been announced in advance, to avoid merchants raising their prices in anticipation of future, announced reductions. By September 1724, the exchange rates were less favorable to France, but this was due to slackening exports after the large volume of exports in 1723.

Duverney stated that the government hesitated before the final diminution of September 1724.³⁷ It was moved to carry it out by the fact that prices and wages had not fallen enough.

Arguments against

An insight into the debates over the policy comes from the manuscript writings of Jean-François Melon (1675-1738). Although he held no official position at the time, he was often consulted on financial matters.³⁸ He vigorously opposed the deflationary

³⁷This is apparent from a prospective budget drawn up by the Paris brothers in August or September 1724, where they allow for the possibility that as-yet undecided further diminutions would reduce revenues (BN 7771, fol. 87v).

³⁸Relatively little is known about Melon's career (but see Melon 1977 and Melon 1983). According to Malézieu, he was a secretary (*premier commis*) of John Law, then of cardinal Dubois and the duke of

policy, and argued for an inflationary policy, even after 1726.

In 1722 or 1723, he wrote in response to the Paris brothers' arguments for a diminution a memoir which, he claimed, dissuaded the Regent from following their advice.³⁹ The nominal value of coinage does not matter for foreign trade since it is carried out by weight. Any misalignment of exchange rates will rectify itself: if a domestic commodity is cheap, foreigners will buy it and bid its price up to its correct level. The main consequence of a diminution, from the government's perspective, will be to make taxes denominated in units of account more burdensome and hence more difficult to collect. It will also increase the real value of the government's debt, which will lead to another default. Melon responds to two concerns that were presumably raised: the plight of the bondholders and the wages of the army. He dismisses the bondholders as mainly concentrated in Paris and numerically not important, and he believes them to be sufficiently diversified so as to benefit from the current economic boom. As for the army's wages, they should simply be raised: although it increases government expenditures, revenues will also be increasing with prosperity.

In one memoir dates May 1725 and another one probably from 1726,⁴⁰ Melon argues that the king's wealth is that of his subjects, and it is impossible to make one rich and the other poor. If production and trade flourish, taxes are paid more easily; if they are not, creating new taxes does not create the means to pay them. The lack of circulation of specie stymies economic activity. Melon blamed the current ills on the reduction of money. He admits that trade could be carried out with more or less specie, if other countries were "in a similar proportion" and if there weren't any nominal debt contracts. But in the current situation, the only ones to prosper were usurers. Melon disparaged the fixation on any nominal value of the marc: nothing has any intrinsic value. Some countered that the value of specie was even lower abroad, but he dismissed the idea by claiming that in countries like Britain and the Netherlands the stock of currency was larger than thought, because of inside money. Conversely, the lack of trust of foreigners in French assets had destroyed the market for bills of exchange in France and reduced the stock of money even further. He also argues that if the French currency were cheaper,

Orléans (BN NAF 2564, p. 137). He was still occasionally consulted on financial matters after 1726. The manuscript in Arsenal 3857 (identical copies in AN K884, n. 48 and University of Minnesota, Bell Library 1727 fRe), contains many texts of his written between 1722 and 1728.

³⁹Arsenal 3857, fol. 300–04. The arguments are repeated in another memoir to the duke of Orléans from the fall of 1723, *ibid.*, fol. 309–12.

⁴⁰Arsenal 4500, fol. 81–88 and fol. 89–103

the demand for exports would increase domestic production beyond what it would otherwise be. He concludes that whatever inconveniences could arise from increasing the nominal value of money were outweighed by the current ills. He also pleads for the usefulness of credit, whether it be in the form of bills of exchange or in the various attempts at public credit that were made in France from the time of Colbert's *Caisse des Emprunts* to John Law's Bank. He concedes that they were not without flaws, but he blames the recession on lack of confidence, both between private parties and with respect to government policy.

A digression to Hume

Some of the ideas generated during this debate made it out of the obscurity of handwritten pamphlets in the cabinets of ministers, into the printed world and into Hume's readings. After writing several other pamphlets advocating augmentations or the creation of a new sort of money in 1727 and 1728, Melon gathered some of the more general theories he had expressed into a "Political Essay on Commerce" published in 1734, and a revised edition in 1736. The work touches on a number of economic topics, but treats at great length the effect of augmentations and diminutions. It contained some provocative statements, such as his assertion that inflation was to be preferred because debtors should be preferred to creditors.

In 1738, a reply to Melon's work was published by a writer named Nicolas Dutot.⁴¹ Although Dutot was also a former collaborator of Law, and even more of an admirer and supporter of his former employer, he took strong issue with some of Melon's claims, particularly Melon's rather casual approach to monetary variations which Dutot strongly condemned. The controversy soon became muddled by an unrelated debate over the merits of Law and the policies of his successors. Dutot had been clearly working for some years on a sort of financial history of the 1710s and 1720s, and for some reason decided to place large segments of his work in his reply to Melon, at the cost of clarity, relevance and consistency. Melon died in 1738 and never responded to Dutot, but Dutot's swipes at the policies of Law's successors, in particular the Visa and the deflation of 1723–25, did prompt a response by Paris-Duverney in 1740. This response was mostly devoted to an attack of Law and a defense of the Paris brothers' record. Dutot

⁴¹Nicolas Dutot (1671-1742) is currently emerging from the shadows of history, thanks to the work of Antoin Murphy (Dutot 2000, xxiv–xxxiii) and others. He was the son of a merchant of Cherbourg; he worked in the Chamber of justice of 1716–1717 and was briefly imprisoned on suspicion of corruption (Funck-Brentano 1903, 185). He later worked in Law's bank under the Bank's treasurer Bourgeois.

prepared a rejoinder but died before its publication, and the controversy abated.⁴² It was nevertheless a resounding debate. Voltaire weighed in with insubstantial remarks, thereby elevating the debate to intellectual prominence. It was translated into English, German, and Italian. That Hume relied on these authors for the empirical evidence on the real effects of money is a testimonial to the impact of the debate on the intellectual circles of 18th century Europe.

The qualitative evidence

A striking aspect of the deflation of the 1720s is that the government was very anxious to know what was happening in the economy. During 1724 and 1725, it made efforts to collect as much new data as it could on prices and wages, and also utilized the existing mechanisms of data collection to put together a picture of industrial activity, particularly in textiles, which was both the most important and the most closely monitored industrial sector at the time. The information that has survived in the archives is very fragmentary, but provides a good qualitative and quantitative picture.

Reports from the inspectors and intendants

The reports of the inspectors are a good source for qualitative evidence on the state of the textile industry. Often, the cover letter for the reports contains remarks on business conditions and activity. Additionally, the intendants reported on economic conditions in their provinces, particularly in late 1724. This section draws on both sources.

The textile industry, after suffering from the collapse of John Law's currency in the second half of 1720, rebounded well and by 1722 was doing very well. In Sedan, the number of looms increased markedly in late 1721 because manufacturers, having lowered their prices and sold many bolts, were induced to bring their looms back into production. By March 1722, there were virtually no idle workers. At the same time in Reims, bolts of cloth were sold as soon as they were finished even though prices were rising, and it was becoming difficult to find workers to face the demand. In nearby Troyes in July 1722, employers were very busy and would have been even more if they

⁴²Harsin published Dutot's manuscript rejoinder (Dutot [1738] 1935). Murphy identified a complete manuscript of the rest of Dutot's planned opus, covering the period from 1717 to 1720, and published it (Dutot 2000).

could have found more spinners and workers, but labor was proving to be harder to find and more expensive than materials. The intendant in Languedoc claimed as well that high profits in manufacturing had induced many new entrants into the industry, driving up wages.⁴³

Activity continued at a strong pace in 1723: in Sedan in January, workers were becoming extremely scarce and their rates had increased by half. In the summer of 1723 commerce with the South of France, which had been disrupted by a plague in August 1720, resumed. In his report for the second half of 1723, the inspector in Sedan noted that not only were there no idle looms, but many new ones were being built. In Amiens, the situation was as good as it could be, the price of cloth was higher than manufacturers hoped for, the number of working looms was rising. But in Beauvais, prices of cloth had started to fall and activity had fallen: the inspector attributed this to the excessive prices which cloths had reached, leading to a cutback in demand, along with a mild winter. He thought this would be a good opportunity for employers to reign in the excessive demands of their workers. The general impression of a booming economy is confirmed by a later report of the intendant in Languedoc, stating that the great fortunes made in trading and manufacturing had induced others to enter into these activities, that manufactures had multiplied and thus pushed up wages as employers compete with each other.⁴⁴ In Carcassonne, the clothiers complained in January 1724 that the great increase in their numbers over the past ten years had driven up competition for laborers and pushed wages up to the point where their international competitiveness was being threatened; they sought and obtained a three-year moratorium on the admission of new clothiers in the city's guild.⁴⁵

The first two diminutions, in February and April, did not appear to affect retail prices very much. On May 11, a report from Paris indicated that silks had fallen 17%, ironware 11%, imported spices 12%, domestic linens and lace 20% but the imported ones not at all. Craftsmen and tradesmen had not reduced their prices at all, although workers in manufactures did reduce their prices when their masters requested it.⁴⁶

⁴³Trignart in Sedan, F/12/1356, Mar 7, 1722; Pasquier in Reims, F/12/1360, Aug 21, 1722; Barolet in Champagne, F/12/1359, Jul 27, 1722; Bernage in Languedoc, G/7/789, 30 Oct 1724. The Bordeaux wine trade had also expanded unreasonably according to the intendant, G/7/147 n. 307.

⁴⁴Trignart in Sedan, F/12/1356, Jan 7, 1723, Feb 17, 1724; Beauvais, F/12/1362A, Jan 22, 1724; Bernage in Languedoc, G/7/789, 30 8bre 1724.

⁴⁵In nearby Chalabre, it was alleged that individuals with no training had begun hiring workers to produce cloth of poor quality (F/12/681, n. 204, 236).

⁴⁶G/7/1707, n. 108.

The tone of the inspectors' reports began to change. In Aumale, the price of cloths was reported in June 1724 to have fallen, and this was attributed to slack demand because wool was no cheaper and foodstuffs were still expensive. Several reports in August 1724 emphasized that the price of wool had not fallen. In Reims, prices of cloth had fallen by 10 or 12% but wool was unchanged. In Tours, the high price of wool was leading manufacturers to leave their looms idle. In Beauvais, activity was reported to have fallen in the second half of 1723 and the first half of 1724, in part because of weaker foreign demand. Prices of cloth had initially fallen after the diminution, but then rose by a sixth. The Trade Council was not alarmed: it expressed the opinion that such fluctuations in activity were normal, declines did not mean collapse. Periods of high demand could lead to excess production and rising inventories, but once production slowed down and inventories were drawn down, normal production could resume.⁴⁷

With the final diminution of September 1724, Dodun asked of the intendants that they send reports every other week, and although few survive, those that do give us a picture of the situation in the fall of 1724.

Many intendants reported that prices in general reacted little (Rouen, La Rochelle, Auch-Pau, Bourgogne) and that the target level of 1716 prices was difficult to reach (Bourgogne, Dauphiné, Languedoc) although others were more optimistic (Caen). The prices of grains and foodstuffs remained high (Alençon, Amiens, Bordeaux, Bourgogne, Caen, Champagne, Dauphiné, Languedoc, La Rochelle, Poitiers, Soissons), as did those of leather and meat (Caen, Metz, Moulins, Poitiers), and iron (Dauphiné, Roussillon). Locally produced cloth was sometimes reported to be falling (Champagne, Amiens) but producers were often reticent, alleging high wages and input prices. As for cloths brought from other provinces, retailers balked at reducing their prices before factory prices came down. Some intendants complained that they could do nothing because of high prices in surrounding provinces (Auvergne, Moulins, Dauphiné). Some doubted that much could be done without price controls (Auch-Pau, Berry, Bourgogne, Languedoc, Moulins) although they recognized how dangerous they would be. A few proposed allowing more foreign imports to drive down prices (Provence, Languedoc). Several expected prices to fall slowly over time through the effect of competition between sellers (Hainaut), especially as demand started falling off (Champagne, Flandres, Orléans, Poitiers), inventories rose (Alençon), and money became scarce (Caen, Champagne). Some reported difficulties with workers (Auch-Pau, Berry, Dauphiné). There were exceptions to this general picture, however. Several reported that the prices of

⁴⁷AN F/12/695, June 16, Aug 7, Sep 12 1724, ; Reims, F/12/1360, Aug 6, 1724.

imported goods adjusted fully (Caen, Provence, Soissons) or at least more than domestic goods (La Rochelle). The price of silks in Lyon seemed to adjust fully as well. Also, several border provinces reported that prices were adjusting fast and more fully (Alsace, Flandres, ironware in Franche-Comté, Metz).⁴⁸

A phrase that appears with increasing frequency is “scarcity of money”. The first reports in late October come from Champagne and Caen. In January 1725 the intendant in Rouen reports that trade is languishing and that there is no demand for cloths, even though manufacturers have lowered their prices, whereas retailers have not lowered theirs as much. He attributed the situation to the lack of money. At the same time the inspector in Dauphiné reported that cloth output had fallen by half in three months because foreign demand had evaporated, foreigners having bought a lot before the last diminution; and also because workers were reluctant to lower their wages. In Troyes in March, merchants were still hoping for a reversal of monetary policy; same remark in Orléans. In Caen in September, the inspector reports that prices of inputs had become reasonable but manufacturers were not producing for lack of money. In Rouen in November, the high price of grain and the lack of money are blamed.⁴⁹

By the end of 1724, the government was apparently becoming concerned with the state of the economy, not just the evolution of prices. In the deliberations of the Trade Council, increasing attention is paid to the reports of the inspectors of manufactures about the conditions of the textile industry and the volume of trade at the major fairs. The reports for the first half of 1725 were consistently gloomy. In Alençon the inspector blamed it on weak demand and high grain prices. In Caen it was said that inputs were now reasonably prices and workers more numerous, but very little cloth was sold by lack of money. In Rouen the lack of money was also being felt.⁵⁰

⁴⁸Alençon, Languedoc, Provence : G/7/1704, n.246 ; Alsace: G/7/444, 20 Oct 1724 ; Amiens: G/7/97, n.240 ; Auvergne: G/7/108, n. 281, 282; Auch-Pau: G/7/121-123, n.181; Berry: G/7/128, n.488; Bordeaux: G/7/147, n.300; Bourgogne: G/7/166-170, n.308, n.311, 313; Caen: G/7/220, n. 177, 182, 185, 187, 189; Champagne: G/7/237, n. 184; Dauphiné : BN 8381, fol. 73v , 83v; Flandres: G/7/266, n.301; Franche-Comté:G/7/285, n.155, n 170; Hainaut: G/7/290, n. 286; La Rochelle: G/7/344, n.245; Lyon:G/7/368-373, n. 43, 48; Metz: G/7/789, 31 Oct 1724; Montauban: G/7/400, 11 Oct 1724; Moulins: G/7/411 25 Oct, 18 Dec 1724; Orléans: G/7/422, n. 303; Poitiers:G/7/456, n. 223; Rouen: G/7/503, n.255; Roussillon: G/7/509, n. 254; Soissons: G/7/513, n. 251.

⁴⁹Champagne: G/7/237, n. 184; Caen: G/7/220, Nov. 1, 1724. F/12/792: Rouen, 21 Jan 1725; Dauphiné, 12 Jan 1725; Troyes, 11 Mar, 1 Apr 1725. Alençon, F/12/1369A, 6 Jul. Caen, F/12/1469B, Sep 1. Rouen, F/12/1363, Nov 28.

⁵⁰Alençon: F/12/1369A, Jul 6, 1725; Caen: F/12/1369B, Sep 1, 1725; F/12/1363, Nov 28, 1725.

In early 1725, the government heard rumors of bankruptcies among merchants, and worried about the possible repercussions on the main trading centers. On January 7, 1725 Dodun asked the intendant in Lyon to be kept informed of any bankruptcies, and two days later he wrote similarly to the intendants in Orléans, Tours, la Rochelle, Bordeaux, Rouen, Marseille, and Lille. The reports he received over the next few months apparently reassured him that the bankruptcies that were taking place would not have systemic repercussions. Either there were none to report, or they befell marginal players who had not borrowed much from other merchants. Only Bordeaux reported a significant number of bankruptcies, but all were linked to a speculative boom in the wine trade that had developed in the previous years, and saw “cobblers, craftsmen and even servants” enter into the business without knowing anything about it.⁵¹ By the summer, a different sort of crisis, that related to grains, would take up Dodun’s full attention.

The reports of the inspectors indicate that the industry experiences a turnaround in mid-1726. In Languedoc, the inspector wrote in August wrote of the difficult times as having just passed; in Sedan, the inspector dated the turn-around to the apparition of the new coinage (of February 1726). In Beauvais, the inspector placed the previous peak in 1722 and 1723, and the trough in the first half of 1726; according to him, the augmentation of coins in May 1726 and the reduction in the seigniorage rate of June 1726 had given some stimulus to trade.⁵²

The fairs

Much wholesale trade was conducted at the fairs, medieval in origin, which took place year-round throughout France. The cloth inspectors and the intendants regularly reported on the fairs, often providing detailed statistics on the volume of sales, prices, and also the volume of goods brought and the volume sold, and sometimes the rate of interest at which bills were discounted.⁵³

⁵¹AN G/7/35, Jan. 1725, n. 13, 27; Feb. 1725, n. 21, 23; Mar. 1725, n. 3, 11; May 1725, n. 15. Bordeaux: G/7/147, n. 307, 313; Lille, G/7/266, n. 347; La Rochelle, G/7/344, n. 248; Lyon, G/7/368-373, n. 50, 56, 57; Orléans, G/7/422, n. 310; Marseille, G/7/792; Rouen: G/7/503, n. 226.

⁵²AD Hérault, C2476, 20 Aug 1726; F/12/1356, 24 Feb 1726; F/12/1362A, 20 Jan 1727.

⁵³The following are the beginning dates of the main fairs: Reims January 7, Saint-Germain and Rouen February 3, Troyes the week after mid-Lent, Reims Thursday after Easter, Caen a week after Easter, Rouen after Whitsunday, Saint-Denis Monday after June 11, Beaucaire July 23, Guibray August 16, Troyes September 1, Saint-Denis October 10. The fairs lasted one or two weeks, except Beaucaire which lasted

At the fair at Dijon in March 1724, business was very bad, the price of cloth was down 8 to 10% but wool was unchanged. At Beaucaire in late July 1724, there was a lot of liquidity and rumors of an impending diminution made everything sell for high prices and in cash; prices increased for wool by 8 to 10% since the fair of Pézenas in June. At Troyes in September 1724, prices had fallen by 12 to 15%. In Reims in October 1724, woolens had fallen by a fifth, but merchants were said to be preparing to increase their prices. At Saint-Germain (February 1725) trade was as bad as in October 1724; a third less goods were brought than the year before, yet only half were sold. Yet prices had fallen by a third on average since the previous fair in February 1724 (right before the first diminution). Money was extremely scarce, and most sellers had to sell on credit, increasing the risk of bankruptcies which were already common.

In Troyes (Feb 26-Mar 6 1725) merchants brought less than the previous year but sold only half of their goods. Prices had still not fully adjusted by the lack of money was expected to bring them down further. At Dijon in March 1725, more goods were brought, more was sold but much of it on credit. At Caen (April 9-24 1725), more goods were brought than the year before, but trade had not been good and many purchases were made on credit, as private lenders were reluctant to make loans. The volume was the same as 1724; prices had fallen by 12 to 15% between April 1723 and May 1724, and had gone back up by September 1724, but fell again to a total of 30 to 33% compared to 1723. At Guibray in September 1725, much less was brought than previously, prices had fallen considerably but payments were difficult, several debtors could only pay an eighth on bills a year or two old. The fair of October 1725 in Saint-Denis had been the best since 1723, for sales if not for payments.

In November 1725 in Pézenas, rumors of an impending increase on coinage for January 1726 caused everyone to hoard cash and few transactions were made, although it was noted that traders who shipped to the Middle East were buying the usual quantities, and hence their business must not have suffered as much as others.⁵⁴ The fair of Saint-Germain in February 1726 was good, but only because fewer goods had been brought (40% less than in October). Only a tenth of the payments were in cash, and a fourth of the goods were unsold.

At Caen (April 29-May 13, 1726) sales amounted to 26% less than the previous year. Very little cash transactions were made but merchants were willing to extend credit and bankruptcies were avoided; nevertheless, manufacturers returned home determined to

three days.

⁵⁴This is corroborated by the quantitative evidence below.

Date	rate	term (months)	rate (p.a.)
Jan 1725	2%		
Mar 1725	1%	1	
Jun 1725	4.5%	2	
	1.25%	1	
Sep 1725	1%	1	12%
Nov 1725			12–15%
Jan 1726			12–15%
Apr 1726	5–5.5%	2	
	6–6.5%	3.5	
Jun 1726	2–2.5%	1	
	5.5%	2	22%
Sep 1726			
Nov 1726			
Jan 1727			12%
Mar 1727			15%
Jun 1727	2.75%	2	11%

Table 3: Interest rates on commercial bills at the fairs of Montagnac and Pézenas, 1725–27.
Sources: AN F/12/1239; AD Hérault, C.2333, C.2345.

lay off more workers. In Pézenas in June 1726, it was noted that the price of cloth had increased in step with the augmentation of coinage. Nevertheless three fourths of the transactions that took place were on credit.⁵⁵

Interest rates

Reports on the fairs of the Languedoc province also provide some information on discount rates for commercial paper, summarized in Table 3. Rates apparently rose markedly and peaked in June 1726. This corroborates the talk of “scarcity of money” from inspectors and intendants, something we would call a credit crunch.

A factor that may have exacerbated the problem was an ill-timed reduction in the usury ceiling set by the usury laws. The ceiling had been 5% since 1679; a reduction

⁵⁵Dijon 1724: F/12/695, 31 Mar 1724. Beaucaire 1724: F/12/695, 26 sept 1724 and AD Hérault, C2126. Reims 1724: G/7/33 5 Nov 1724. Troyes 1724: G/7/33, 5 Nov 1724. Saint-Germain: F/12/1234B. Troyes 1725: G/7/792, Mar 11, 1725. Dijon 1725: G/7/792, 2 Apr 1725. Guibray 1725: F/12/1235, Sep 3, 1725. Caen: G/7/792, 2 May 1725. Caen 1726: F/12/682, 27 Jun 1726. Pézenas: AD34 C/2345.

from 5% to 4% had been debated in 1715–16, and again in August 1717,⁵⁶ and Law attempted in March 1720 to reduce the legal ceiling to 2% but the edict was never registered in Parliament and did not come into force. In June 1724, the legal ceiling was lowered to 4%, with some resistance from the Parlements.⁵⁷ In June 1725, the government did an about-face and admitted that this had resulted in lenders either withholding their funds or engaging in usurious (and illicit) practices: “we have ceded against our own opinion to the general wishes of our people.”

The role of expectations

Even before the diminutions began, expectations of monetary policy were already influencing the behavior of producers. The inspector in Champagne noted in July 1722 that they had never earned so much and had the upper hand over traders who were looking to invest their funds in fear of a diminution: the latter thought there was less to lose by holding goods, and they were willing to buy any cloths they found without examining their quality.⁵⁸

Shortly before the first major diminution in February 1724, there is evidence a policy of reducing the value of currency was expected. On January 15, Dodun sent a questionnaire to the intendants, asking among other things about the prices of grains. Almost all reported that prices were high, and gave a variety of reasons (mediocre harvests in the previous two years, a dry spell during the second half of 1723, lack of fodder), but several (in Châlons, Paris, and Poitiers) reported that farmers were selling only small quantities because they feared a diminution of coins, and were “keeping their inventories as an asset liable to a smaller loss.” This suggests that farmers and grain merchants not only expected a diminution, but also expected that grain prices would not fall as much in value as currency. The intendant in Dauphiné complained that high prices were due to the high value of coins and urged the government to lower the coins “or, if it is necessary for political reasons to leave them as they are, assuage the public’s fears of an impending diminution.”⁵⁹

Reporting on the Beaucaire fair of late July 1724, the inspector noted that the fear of further diminutions had led to a frenzy of purchases, and prices had risen by 12 to

⁵⁶AN Mar G 135; Mazarine ms. 2432, fol. 85–89.

⁵⁷See for example the complaints of the parlement of Provence (AN G/7/792).

⁵⁸AN F/12/1359, July 22, 1722.

⁵⁹AN G/7/1902.

15% over the course of the fair, everything being bought cash; wool had risen by 8 to 10% since the fair of Pézenas in early June. In Tours, in early September, the inspector reported that sellers were unwilling to sell, and buyers eager to buy, because of fears of further diminutions.⁶⁰ Similarly, the inspector in Troyes reporting on the fair of September 1724 attributed the high prices of wools to the belief among traders that it was better to keep one's funds in goods; those who have money prefer to lend it to merchants without interest than lending it in annuities at 3.3% (the legal interest rate).⁶¹

As noted above, the government attributed the lack of movement in prices to expectations of further diminutions, in April and in September 1724. Dodun thought it important to alter public perceptions of future policy: "Although the public should be well assured on the fear of further reductions after the letters I wrote on the orders of the king and His Serene Highness [the duke of Bourbon] in all provinces of the realm, I am informed that the rumor of another reduction is being spread in Paris and in several provinces; although all men of good sense can see that this rumor is without basis it has nevertheless had an effect in some places and serves as a pretext for merchants and craftsmen (who are probably the authors of this rumor) not to reduce the price of their goods." The intendants were asked to find out the names of those who spread the rumor and forward them to him.⁶² At the same time, on October 18, 1724 the *Cour des monnaies* made it an offense to propagate rumors of future diminutions, punishable by a fine of 500L (Paris-Duverney 1740, 2:344).

Later reports continued to link the fact that prices did not decline enough to expectations, although not necessarily of further diminutions. In March 1725, the inspector in Troyes reporting on the recent fair, commented that merchants had been expecting an augmentation of coinage would be conceded to stimulate trade, and most of them still expected one. In April, the intendant in Provence expressed the belief that money was still scarce and would remain so until coinage had come close enough to its intrinsic value to persuade the public that no further changes would take place.

⁶⁰AD34 C2126 letter of Huré de la Chapelle, Aug 1, 1724; AN F/12/695, Sep 12, 1724, Sep 26, 1724.

⁶¹AN F/12/695, Dec 18, 1724.

⁶²AN G/7/32, May 2, 1724. It was well known that the mail carried by the post office was opened and read by government officials. A few days later the finance minister sent to the lieutenant of police of Paris copy of a letter written by a man named Villeroy-Hubert to his sister in Brittany informing her of an impending reduction, and asked for the arrest of the unfortunate fellow; he was not in Paris at the time and it is not clear if the order were ever carried out (AN G/7/32, May 22, 1724; Arsenal, 10,832, fol. 46-49). Another report contains the names of two Paris merchants who wrote letters "contrary to the intent of the King's Council," and who received warnings (AN G/7/1707, n. 116).

Reporting on the Beaucaire fair of July 1725, the inspector said that those who had cash preferred to hold on to it or buy bills of exchange rather than buy goods, since some prices had still not bottomed out.⁶³

By then, expectations about the course of the economy rather than government policy may have become more important. Already in October 1724, some merchants conceded that prices would fall of themselves because of reduced demand, whether foreign or domestic, and also because increasing unemployment would push down labor costs. A similar belief was expressed by the deputies, who thought that increasing pressure from the creditors of merchants would sooner or later force the latter to sell their inventories and drive down prices, as had happened in 1715 (with an accompanying raft of bankruptcies).⁶⁴

The government's reaction

The bewilderment of government officials at the response of prices is well expressed by the intendant in Bourges, writing in October 1724:⁶⁵

It is true that, far from seeing a reduction in the prices and wages, by a barely conceivable madness it seems that everyone in concert insists on doing the opposite of what common sense and reason dictate; since by giving almost double the weight of silver that one gave twelve or fifteen months ago, one obviously ought to receive the good at half its former rate, yet everyone is so accustomed to sell dearly that no one can bring themselves to lower their prices.

As the economy's response failed to meet its expectations, the government started monitoring the economy closely.⁶⁶ The successive diminutions can be seen as further

⁶³G/7/792, 11 Mar 1725; F/12/792 9 Apr 1725; AD Hérault, C2301.

⁶⁴AN G/7/33, letter of October 22, 1724 to La Tour, intendant in Poitiers; F/12/695, 18 Dec 1724. The deputies' comment on bankruptcies led them to muse that perhaps a further fall in prices was more to be feared than desired; these perhaps too candid comments were struck out from the final minutes of the Council's meeting.

⁶⁵AN G/7/188, n. 488.

⁶⁶ In July 1724 the finance minister asked the inspectors for a complete census of all establishments, the number of looms or workshops, the number of workers employed, the type of product, the price of each product and where it was sold or exported. On August 30, he sent to the intendants pre-printed forms to be filled with data on wages by trade, skill level, and season in a variety of trades for the years 1712,

attempts to push down prices, although it is clear that from the start the target level of prices was quite low. If prices didn't react as expected, what else could be done?

The bully pulpit

On foodstuffs (*denrées*), the authorities were extremely cautious: "it would be dangerous to use coercion on this matter for which one must act only with care, discretion and by way of insinuation (*l'attention, les ménagemens et la voye d'insinuation*) must be used"; and elsewhere "as for the necessities of life, one can only bring care and exhortations, because it would be too dangerous to control their prices".⁶⁷ Direct price controls were consistently ruled out (with one minor exception to be described below).

Instead, the government resorted to "moral suasion," in an apparent belief that only ill-will, or perhaps a lack of coordination, was hindering a general fall in the price level. In his instructions to the intendants, the finance minister repeatedly told them to talk with producers and traders to convince them to lower their prices. He also anticipated various objections that would be raised and offered counterarguments.

The government initially thought that moral suasion should be exercised along the production chain. The instruction of April 1724 told the intendants to begin discussions with sellers of raw materials first, then move on to manufacturers and then traders and merchants. To the excuse of merchants that they bought their wares at a higher price, the answer was that they had compensated themselves in advance for this loss by selling at excessively high prices in recent months in spite of the coin reductions; moreover, it was only fair that they should bear the same loss on their holdings of goods that their customers suffered on their holdings of cash or claims on cash. Holders of claims on foreign exchange profited from the appreciated exchange rate, while most domestic bills of exchange were denominated in coins of a specific date and thus protected from the effect of the coin reduction.⁶⁸ The following month, when Dodun learned that merchants in Orléans were trying to keep the price of sugar and spirits at the earlier level,

1716, 1719, 1723 and 1724 and at the *élection* level (of the 31 intendances, 19 were in pays d'élection and contained a total of 160 élections). A similar letter was sent on the same day to the inspectors asking for similar historical data on manufactures (AN G/7/32, July 19, 1724, August 30, 1724). How many of these forms were actually filled and returned is not clear: I have not found any of the reports from the intendants, and only one report concerning only the woolen manufactures of Carcassonne (AN F/12/556); a report on wages for Amiens is listed in the catalogue of AD Somme, C.157, but is currently missing.

⁶⁷AN G/7/33, letter to Bernage, Oct 29, 1724; letter to Amelot de Chaillou, Nov 5, 1724.

⁶⁸AN G/7/31, letters to the intendants of April 4, 1724.

he instructed the intendant to tell them that they had to lower their prices by a third.⁶⁹ In September 1724, he repeated his instructions to the intendants, and provided them with additional arguments to use in their discussions with merchants. The point of comparison for deciding whether a given price or wage was excessive was to be the level of prices in 1709 and 1716; merchants' arguments that their prices needed to fall in proportion with the cumulative reduction in coin value since 1723 should not be accepted, because prices had been excessively high in 1722, even accounting for high coin valuation.⁷⁰

Faced with what seemed like obstinacy or insubordination, the authorities made themselves somewhat more threatening. Writing to the intendant of Tours, the finance minister said that he was aware that some merchants were keeping up the prices of sugar and brandy: "I ask you to summon before you the main dealers of Orléans to ask them to account for their behavior and at the same time to inform them most seriously that if they do not promptly fall into line by reducing the price of their wares by a third or a half, the matter will be handled in a manner efficient enough to stop this sort of exaction."⁷¹

Such vague threats could not be expected to have much effect, and by October Dodun was suggesting other methods, such as sting operations. While admitting that it would be too difficult to control the prices of their wares, nevertheless merchants were instructed to bring prices to the level of 1716, and the main task was to identify the worst offenders. To do so, the intendant was advised to send two or three reliable individuals secretly to bargain with those merchants, and on the basis of their affidavits, sentence the merchants to heavy fines and confiscation of the goods. Dodun conceded that there was no legal basis for such sentences, but any appeals of the sentences would be handled by the King's Council in its judicial capacity, which could be relied upon to uphold the sentences.⁷²

There are a few instances of similarly mild actions. The government, as was well known, opened private letters as a matter of course. One such intercepted letter by a merchant of Reims instructed his agents to raise rather than lower their prices; the finance minister told the local intendant to summon the merchant and threaten him

⁶⁹AN G/7/31, letter to Bouville, May 11, 1724.

⁷⁰BN Fr8362, fol. 105.

⁷¹AN G/7/31, letter to Bouville, May 11, 1724.

⁷²AN G/7/789, letter to Bernage, 29 Oct 1724. The advice appears in letters to other intendants, such as Amelot de Chaillou in La Rochelle and Pajot in Montauban (G/7/33, 5 Nov 1724).

with being barred from engaging in trade. (G/7/32, letter May 26, 1724 to Lescalopier).

Collection of taxes was also used as a means to modify the producers' incentives via their budget constraint. In the middle of October the finance minister commented to the intendants on the high prices of grains, which could be in part attributed to the sowing season, but also to the greed of the wealthier farmers who were buying up grains on the markets. There was little to be done about it yet, but by the end of November, after the sowing season, the intendants were to ask the tax collectors to aggressively press farmers for the payment of the *taille*, so as to force them to sell some of their inventories and bring down prices.⁷³

Timid attempt at price controls

The one exception to the “moral suasion” approach confirms the rule that the government was reluctant to interfere directly with the price-setting mechanism. This concerns high-end woolens produced in the North of France and sold in Paris stores.

In April 1724 the minister received a notice from the *gardes de la draperie* (the officials in charge of the wholesale cloth market in Paris) that, after the coin reduction of early April which had reduced the nominal value of coins by a little over 20%, the price of many woolens sold in Paris had not fallen proportionately. To support their claim they reported prices before the first reduction of August 1723 and after the most recent one, of April 1724 for a broad range of fabrics, from cheap razes of Saint-Lô at 6L to the luxury scarlet fabrics of the Gobelins at 36L. The price reductions fell far short of the cumulative fall in nominal value of coins ($1/3$), ranging from 2% to 20% with an average of 13%. The guards insisted particularly on the most expensive fabrics, those of the Gobelins produced by Julienne, those of Abbeville produced by the Vanrobais firm, and those of Sedan produced by the widow Pagnon and Rousseau. They thought that the first should sell at 33L instead of 35L, and the others at 24L instead of 25L; “and as soon as one attends to reduce the price of fabrics of these three manufacturers the others will conform.”⁷⁴

Dodun latched on to the notion that forcing down the prices of the high end would naturally move the whole price distribution. It decided to establish the right price for the four manufacturers (Julienne, Vanrobais, Pagnon, and Rousseau). The deputies of the Trade Council pondered two briefs presented by the Vanrobais firm to justify the price they were setting.

⁷³AN G/7/33, letter of Oct 15, 1724 to the intendants.

⁷⁴AN F/12/681, n. 139.

This manufacture was founded in 1665, when Louis XIV authorized a Dutchman named Josse Vanrobais to settle in the northern city of Abbeville with a number of Dutch workers and set up production of fine woolen fabrics. The goal, a classic instance of Colbert's mercantilism, was to create a domestic industry that could compete with the Dutch and English industries. The firm was given a royal privilege, giving it exclusive right to produce these fabrics in the town of Abbeville, and granting it various exemptions and tax breaks. The privilege ran for twenty years and was renewed repeatedly, for Josse and after him for his sons Isaac (who died in 1703) and Josse. In 1724 the firm was run by the younger Josse and the children of Isaac.

The Vanrobais received a letter from the minister, asking them to reduce their prices, and making the threat that foreign competitors might be allowed to import their fabrics if the Vanrobais did not comply. The Vanrobais argued that they could not reduce their prices as much as was asked because all their costs were high, from wages which were 40 to 50% higher than in 1716, to Spanish wool whose price in Spain had not changed but was more expensive in France due to unfavorable exchange rates. They argued that their cloth had always sold for roughly the price of a half marc of coined silver. As for the threat of foreign imports, they dismissed it, claiming that the price of comparable English fabrics was higher than theirs.⁷⁵

A second document admitted that they had not always stuck to the half-marc rule, but this argued in their favor: their cloth sold at 29L when the marc was at 75L, even though they could have charged more. Their final argument was to note the English were unable to undercut their price even though "good policy would demand that they set their price below that of the Vanrobais so as to introduce their fabrics into the kingdom to the detriment of national producers."

The Trade Council nevertheless decided that the Vanrobais should be forced to sell their cloth at 23L the ell,⁷⁶ and that Julienne should lower the price of his cloth to 32L, in spite of his royal privilege: "the intencion of the king [in granting such privileges] has never been that they should be used to vex the public," and he might lose his privilege if he refused to follow these orders. It was also decided to allow retailers a mark-up of 1L on the Abbeville and Sedan cloths, and 1.5L on the cloths of Julienne; and to tell them to sell imported cloths of similar quality at the same prices. Vanrobais wrote back to accept the decision, as did Julienne. The Sedan manufacturers, Pagnon and Rousseau,

⁷⁵AD Somme, C158. They also provided, as requested, the history of the price of their fabric since 1716. Similar arguments were made by the manufacturers of Sedan a few months later (G/7/792, 5 Jan 1725).

⁷⁶The French measure, the *aune*, was 118.2cm, or 3.4% longer than an English ell.

saw their cloths set at 22L, although they kept their price at 23L.⁷⁷

The matter came up again after the diminution of September 1724. The finance minister wrote on October 4 to the Trade Council, asking the deputies to give their opinion on the appropriate price at which cloths of the main manufacturers should be set after the latest decree. The Vanrobais had of their own lowered their prices to 21L the ell, and Pagnon at 20L. The deputies decided to follow the same method as in April and consider the costs of inputs. They noted that foreign exchange rates having improved, the price of Spanish wool, cochineal and other imports had fallen, but wages were still very high. They proposed setting the prices of Vanrobais cloth at 20L, Pagnon's cloth at 19L, and Julienne's cloths at 29L and 31L depending on the quality. At the meeting of the Bureau on October 12, the commissioners suggested that the prices should be reduced by 20% since coins had been reduced by that amount, but the deputies insisted that wages (which affected not just the cost of labor, but also the prices of tools and other inputs) were still too high and no one knew how long it would take for them to come to a reasonable level.

On Oct. 28, the Vanrobais wrote to Dodun to say that they could not reduce their prices below 20L, on account of the price of Spanish wool being 900 reales (as opposed to 700 to 750 in 1717). Wages could not be reduced even by 5s, as they had not increased as much as elsewhere, and had already fallen over the previous four months.⁷⁸

The finance minister had also asked that the price of other fabrics be examined. A visit to the main draper of Paris convinced the deputies that prices of fabrics made in Picardy (serges, barracans, camlets) had fallen by 20% and required no further action; the deputies also noted that it would be difficult to set the prices of such cloths because of the variability in quality, a remark that the commissioners endorsed. Those made in Berry did not seem to have fallen in price as much, but the deputies preferred to wait until the Saint-Denis fair to ascertain prices. As for silks and other luxury fabrics, it was decided to send for more information from the producing regions (Tours and Lyon).⁷⁹

At the next meeting a week later, the chairman of the Trade Council reported that the finance minister had approved the prices set by the Council, but worried about putting no expiration date on the price ceilings. Should the price of inputs fall further, the manufacturers would have no incentive to continue to force wages down and lower their prices. The minister had in mind a whole schedule of maximum prices moving

⁷⁷AN F/12/71/2, p. 124–126; F/12/68I, n. 138 to 144; G/7/1707, n. 114.

⁷⁸AN F/12/1353.

⁷⁹AN F/12/71/3, p. 201–211. F/12/695, 6 Oct 1724.

down over time until the desired levels were reached. After the Paris lieutenant of police had gathered information on the prices at which the cloths had sold in 1716 and 1717 in Paris shops, the Council considered the matter again. The chairman proposed that the Vanrobais cloths be set at 19L from December 1, 18L from January 1, and so forth until they were brought to their 1717 level of 17.5L. The Vanrobais firm, given the opportunity to comment on this plan, repeated its claim that it could not presently lower its prices, and argued that the price of wool in Spain was higher than in 1717 by 20 to 30%, and that the wages it was paying its workers could not be lowered any further.

The deputies weighed in: not only were wool prices higher in Spain, but also foreign exchange was higher. But how could the price of foreign exchange be different when the marc of coined silver had the same nominal price? The reason, they explained, was the spread introduced by the seigniorage rate. According to them, foreign exchange sets itself on the mint price, which was 20% lower than the price of coins in 1716, whereas it was only 1.5% lower in 1724. As for wages, the Vanrobais had been able to lower them, but only because of their position as a local monopsonist in Abbeville. Producers in other places “are not the masters of their workers: the latter work for the manufacturer who offers the highest wage; spinners demand a certain price to spin wool, otherwise they spin cotton.” And wages were 20 to 25% higher than they used to be, and were likely to remain so as long as the price of necessities remained high. The deputies concluded that the price of cloth could not be reduced further.

A general discussion followed. The Council admitted that pushing down prices as proposed could drive manufacturers out of business; and even if the richest ones could absorb losses, the smaller ones could not. Nevertheless, it was decided to announce one further reduction in prices of cloth for January 1, and to decide later whether or not to go further.⁸⁰

The finance minister also asked the Council if it was possible to set the prices of cheaper cloths as well. To this effect the lieutenant of police once again collected data on these prices and compared them with their level in 1716–17. It was found that they were generally more expensive than before; and, compared to the prices of the more expensive fabrics (which, it was thought, had fallen by about 16% since the start of the coin reductions) some had fallen by more and others by less. But the deputies were firmly opposed to any attempt at fixing those prices. They first argued that high costs were a factor here as well, both wages and wool prices. Even those fabrics that used French wool also faced high prices, and the deputies recalled that wool prices, which had

⁸⁰AN F/12/71/3, p. 232–42.

declined in February and March, had climbed again at the time of the new wool harvest in May and June. They conceded that the margins of both producers and retailers could be smaller, and it might be desirable to reduce them, but it was not feasible. The difference they saw with the high-end fabrics of Abbeville and Sedan was that the latter were a homogeneous commodity, of constant quality. Other fabrics, even coming from the same town, could vary considerably in quality and workmanship, and the price vary consequently by as much as 30%. How could the price be set for such items? If it were set according to the best quality, then the public would pay too much for the lower quality. If it were set according to the lower quality, the high quality producer would not be able to compete. And “if the good and bad fabrics are set at the same price, it will follow that only the bad ones will be produced and our manufactures will decline from the high state of perfection that they have reached.” The commissioners were persuaded by these arguments and unanimously agreed that setting the prices of other cloths was not feasible.⁸¹

Some of the manufacturers who were subjected to the price controls pleaded their case directly. The widow Pagnon and her son wrote to the Bureau to explain what the costs of their inputs were, and that the cost of producing an ell of cloth was 5L higher than in 1716–17, or 21.5L. The deputies commented on her letter and essentially agreed with her. Any attempt to force down the price of wool by forcing down the price of cloth, they said, would result in either manufacturers ceasing to produce or using an inferior wool, or else wool importers ceasing to bring wool to the market. The widow Pagnon’s plea and the deputies’ comments were taken up at the Bureau’s meeting on January 4, and the commissioners unanimously decided not to debate the matter. Another memorandum, from February, details the costs of production and arrives at a total of 19.625L (including overhead and capital costs); but the Bureau again stuck to its decision.⁸²

The rejection of the widow Pagnon’s appeal did not mean that she obeyed. In fact, a few weeks later a report by the lieutenant of police showed that the prices set in October were applied by Vanrobais, but not by the Sedan manufacturers Pagnon and Rousseau; as for the prices set for January 1, they were ignored by all three. The matter was referred to the finance minister to see what he wanted to do about it. The widow Pagnon was summoned by Dodun on Feb. 15, 1725, but I have found no trace of the outcome.⁸³

⁸¹AN F/12/71/3, p. 284–87; F/12/695, 20 Nov 1724.

⁸²AN F/12/681, n. 257, 258, 269, 256, 259, 278.

⁸³G/7/1704, n. 247–248; AN F/12/681, n. 275; G/7/35, Feb. 1725, n. 17.

These debates reflect divergences between deputies and commissioners, and it is interesting to note that the business community's views won out in the end. The strong temptation to intervene for some prices (those visible in Paris to policy-makers, at least) was counter-balanced by the practical difficulty of setting prices for goods of varying quality. The only case where it seemed feasible to intervene concerned items produced by monopolists, where there was some hope of squeezing profit margins with the threat of withdrawing part of the privileges. How much pressure was the government really willing to exert? In the case of the Vanrobais, whose privilege was coming up for renewal in 1725, the government attached great importance to the manufacture: when the Parliament balked at certain clauses of the proposed privilege (in particular the tolerance for Vanrobais's protestantism), Dodun wrote that "the view to keep a man as necessary as Mr. Vanrobais must make us pass over many considerations, and it is of an extreme importance not to create any difficulties that would impel him to take into foreign countries a manufacture unique of its kind and which can be regarded as one of the main sources of wealth of the realm."⁸⁴ In the event, the pressure brought to bear had only limited effect, and the orders were outright ignored by some.

After the May 1726 augmentation, the prices of these high-end manufacturers were quick to move. In July, it was reported that Vanrobais sold his cloth at 22.5L and Rousseau and Pagnon at 21.5L; Vanrobais agreed to lower his price to 22; but Rousseau and Pagnon again ignored the government's summons.⁸⁵

Labor relations

While the government showed itself reluctant to intervene in markets and made only timid attempts to enforce its price controls for manufactured goods, it was more willing to use force when it came to wages. In the April 1724 instruction, he warns against "cabals" formed by workers to prevent a fall in wages: "a few examples of severity will easily bring them back to their duty, as I just experienced in a similar case in Paris concerning the silk workers of Paris." Dodun was referring to the following incident.

In March 1724, the manufacturers of stockings of Paris gathered and decided that, since the prices of their raw materials had only slightly fallen, they had to force a wage cut on their workers. They announced to their workers that the rate for stockings would be cut by 4s for silk stockings and 2.5s for wool stockings. Upon hearing the news, a number of workers walked out and persuaded the others to contribute 6 or 10s to a

⁸⁴AN G/7/35, Jan. 1725, n. 38.

⁸⁵AN F/12/682, 18 July and 1 Aug 1726.

fund to support them while they were on strike. Among the organizers, a secretary allegedly kept a list of the strikers while the treasurer collected the funds (Barbier 1857, 1:351). To avoid arrest, they established themselves in the precinct of the Temple, which by tradition was a sanctuary. The treasurer was alleged to be one Étienne Michel, and the fund amounted to 12L per week for about 20 strikers. This forced the employers to rescind the wage cut, and they wrote to the finance minister to ask him to intervene. On March 25 the lieutenant of police was asked to place Michel under arrest. Michel was promptly imprisoned at the For L'Évêque and interrogated.

Michel, under interrogation, denied having anything to do with the strike. He had been working for the same employer for four years and had not ceased work, even accepting a reduction of 5s on his previous piece rate of 3L per silk stocking. He had heard of the strike, and thought that some of the workers gathered at a tavern in the Temple area where he lived. He also admitted having contributed to what he thought was a fund for sick workers; it was pointed out to him that there already existed such a fund, but he claimed that it was not unusual to see workers collecting contributions for charitable activities. He provided the name of the man in charge of the collection, Lestoque, and the names of a half dozen strikers, including Lefèvre father and son. Curiously, the four men named by the employers as being leaders of the cabal do not seem to have been arrested.

The police suggested arresting those three, and orders were soon sent to that effect. Lefèvre father and son were arrested on April 4, and Hubert Lestoque on April 11. Lestoque admitted having stopped working for a few days to protest the cut in wages, but claimed that he had been working at the new rate for three weeks. He denied any knowledge of the conspiracy, but admitted having collected some funds for sick workers, although he could not name anyone who had contributed.

On April 14, the officials of the corporation of hosiers wrote to the lieutenant of police to ask for the release of the men arrested. The arrests had had the desired effect, all workers had returned to work and the cabal was completely ended. Separately, Michel's employer wrote to vouch for his worker, assuring that he had never given cause for complaint, had not taken part in the cabal, and had been maliciously implicated. Rather than free the men immediately, the government preferred to send them to the hospital for a while; finally, all four arrested workers, after tearful pleas from their families, were deemed "sufficiently punished" and were freed in June.⁸⁶

⁸⁶AN G/7/31, letters to Maurepas and d'Ombreval of March 25, April 3, April 22, 25, May 5, 24, June 17, 20. Arsenal 10846, 91-164. AN G/7/1707, n. 159-196.

A similar case occurred in the paper industry in the Dauphiné. In June 1724, workers at several paper mills demanded a wage increase of 12L per year, and when employers refused the workers walked out. One of the employers who refused to cede wrote to the Trade Council which referred the matter to Dodun. On July 21, Dodun wrote to the intendant in Dauphiné and asked him to arrest those workers that seemed the most guilty “for the length of time that you deem appropriate,” and also to put an end to the “bad example” given by the “reprehensible ease” with which those employers conceded the raise. Fontanieu had two workers arrested, and also had the local authorities in Crest give a verbal dress-down to the named employer and threaten him with severe punishment should it happen again.⁸⁷

Quantitative evidence

Prices

I now turn to the quantitative evidence on the reaction of prices to the diminutions.

Foreign exchange markets

Coins were made of gold and silver; this is the essential difference between the regime of the time and modern systems. This should have implications for the behavior of the price of silver and gold bullion. Elementary logic suggests that the market price of either metal must have immediately fallen between the mint price and the mint equivalent: had it been lower than the former, minting would have occurred, increasing the money supply; had it been higher than the latter, melting would have occurred.

I do not have any evidence on these market prices, but the closest analogue can be found in foreign exchange markets. These markets traded claims on foreign (gold or silver) currency delivered in a foreign city at a future date (typically one or two months forward). Give or take the costs of arbitrage (shipping, insurance, and the time cost), the mint prices and mint equivalents should have placed the same bounds on the price of foreign currency.

As it turns out, the one market that systematically showed immediate and complete adjustment to the diminutions was indeed the foreign exchange market. We do not have

⁸⁷AN F/12/71/3, p. 55–56; AN G/7/32, 21 July 1724 letter to Fontanieu; BN Fr 8381, fol. 4.

very good direct evidence on the market in Paris, but we do have series of quotations from two foreign markets, London and Hamburg. Figure 2 shows the quotations for French livres (units of account) in London, twice a week. For comparison, I also plot the parities for gold and silver. Each metal has two parities, depending on whether one is minting or melting French coins: the difference between the two lines reflects the seigniorage charge levied by the French mints (in other words, the mint price was always lower than the mint equivalent; Britain did not charge any seigniorage). These parities do not reflect costs of physically shipping gold or silver from London to Paris, so they are narrower than true gold (silver) points. Figure 3 shows the same thing for Hamburg, with only one pair of parities since Hamburg used only silver currency.⁸⁸

The one source for foreign exchange quotations in Paris comes from Dutot ([1738] 1935), but he usually provides a range within which the London quotations varied over a certain period of time. I have represented this as rectangles in Figure 15. The parity is the one calculated by Dutot himself.

Up to the few days' delay in transmitting information, we see that the foreign exchange quotations adjust immediately and fully to the diminutions and augmentations.

The effect of the exchange rates on the trade balance is clear from the available annual data on merchandise exports and imports (Figure 5). Exports were booming in 1723, but collapsed in 1724, and the balance turned negative, a rare event in this period. The collapsed in foreign demand for French textiles was noted by the intendants in Poitiers and in Lille in October 1724.⁸⁹

Stock market

France did not have a full-fledged stock market until September 1724. Although an informal foreign exchange market had existed for a long time, and bankers' account books contained quotations for various government securities, it took John Law's System to see the emergence of a centralized trading place. In the aftermath of his System the market remained unregulated, but a bout of severe speculation and suspicions of manipulations led the government to create a true securities market, with an assigned location, designated brokers, opening hours, and regulations. This market opened on October 17, 1724, and operated until 1793.

⁸⁸There was a time lag before the news reached foreign cities. For Hamburg, the regular post took nine days; for Amsterdam, five days. The time to reach London depended on the winds over the Channel: reaching Calais alone took three days (AE M&D France 1252, fol. 128).

⁸⁹G/7/266, n. 301; G/7/456, n. 223.

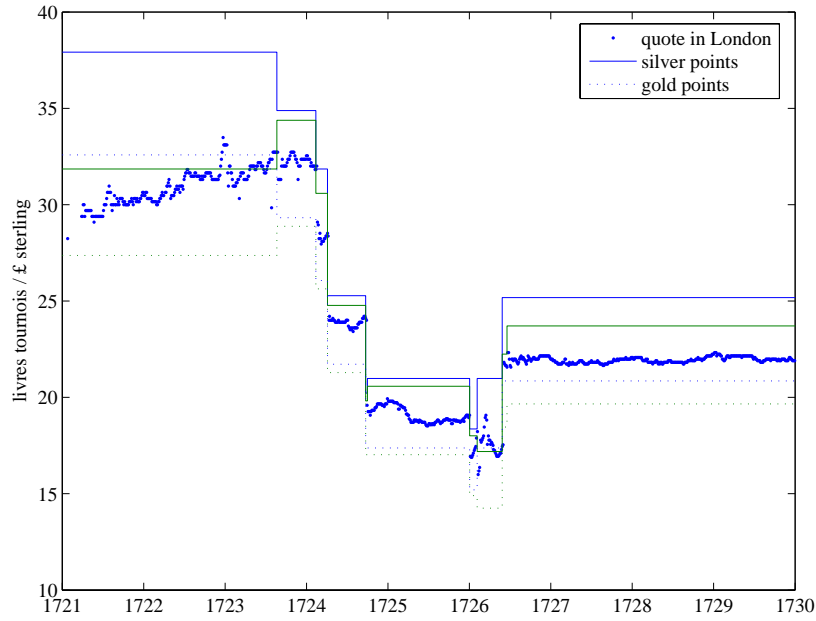


Figure 2: Exchange rates on Paris in London, 1721–29. The lines indicate the silver and gold points. Source: *Course of the Exchange*.

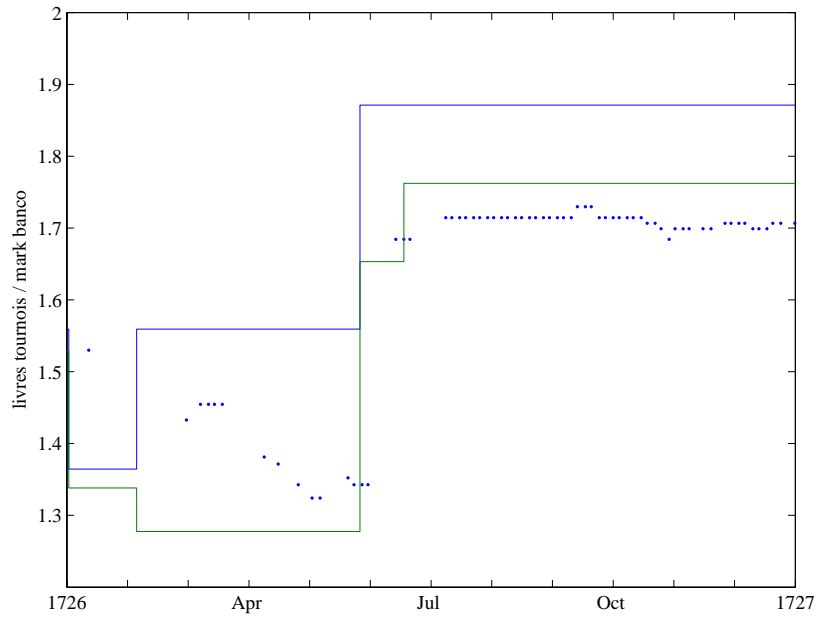


Figure 3: Exchange rates on Paris in Hamburg, 1726. The lines indicate the silver points. Source: *Geld-Cours*, Staatsarchiv, Hamburg.

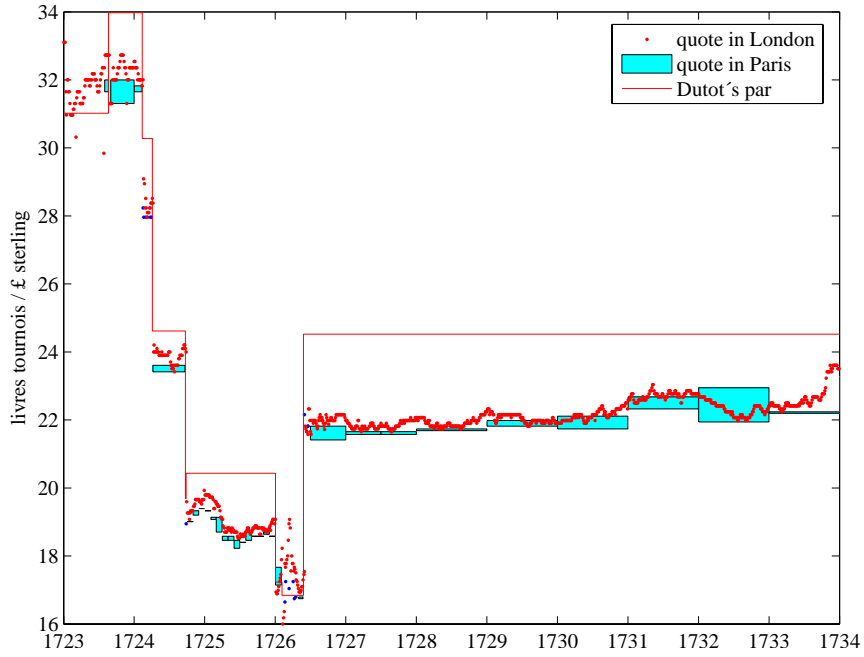


Figure 4: Exchange rate on London in Paris, 1723–34. Source: Dutot ([1738] 1935).

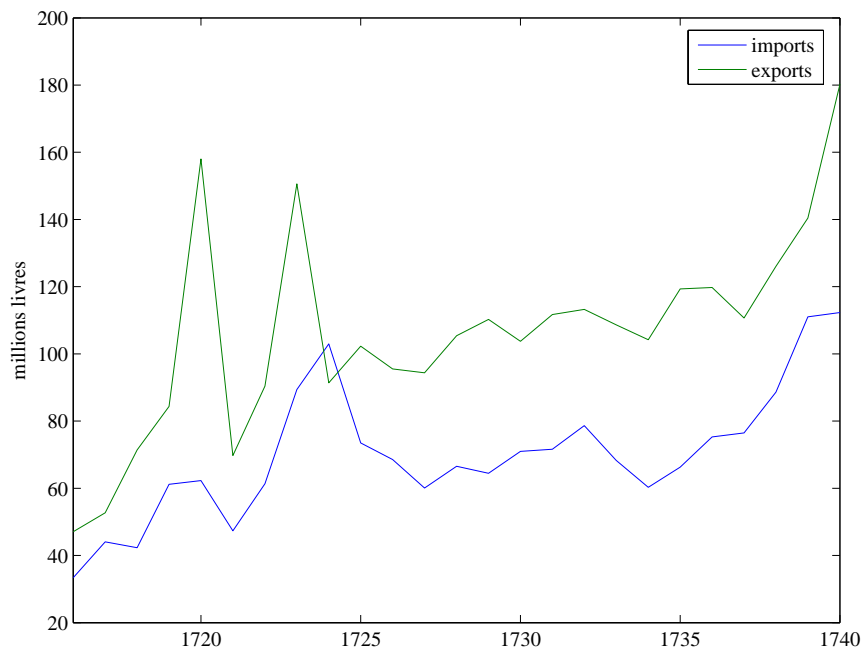


Figure 5: Exports and imports, 1716 to 1740. Source: Romano (1957), AN F/12/534A.

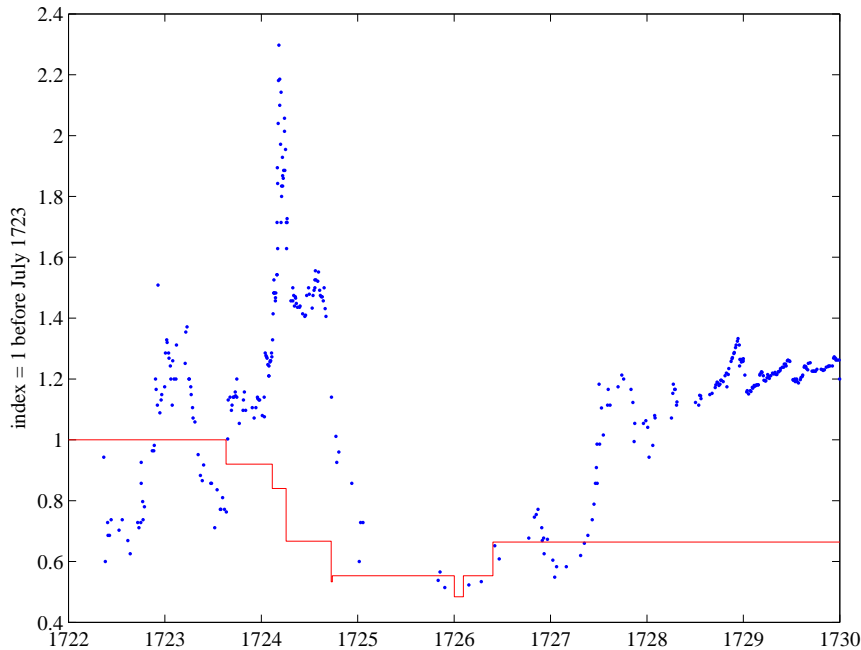


Figure 6: Index of the price of shares in the Compagnie des Indes, 1722–29. Source: *Gazette d'Amsterdam*, (Marais 1863–68, 2:329, 347, 363), (Buvat 1865, 2:456–59), BN Fr 1377I, Arsenal 10155–56, Bibliothèque historique de la Ville de Paris mss. 712.

The only security whose price is reported with any regularity is the share in the *Compagnie des Indes*, survivor of John Law's System. The quotations are found in contemporary diaries or handwritten newsletters, as well as in the *Gazette d'Amsterdam*, a French-language newspaper published in Amsterdam. It reports prices regularly only from 1727. Figure 6 plots the quotations I have been able to find, normalized to 1 in the period from 1722 to July 1723, before the first diminution.

Although the daily price variations are large, they do not show any evidence of reacting to the diminutions. The Company's commercial prospects were still very uncertain, and the market seemed prey to rumors and price manipulations. Importantly the share's dividend, set at 150L in 1723 when the firm emerged from its reorganization, was not changed during this period. At its meeting on Dec. 27, 1724 the Company decided to maintain the dividend at its current level. It was still counting on being able to raise the dividend in the future, but it noted that keeping it at the same nominal level was already a real increase, and it preferred to wait until profits were sufficiently reliable

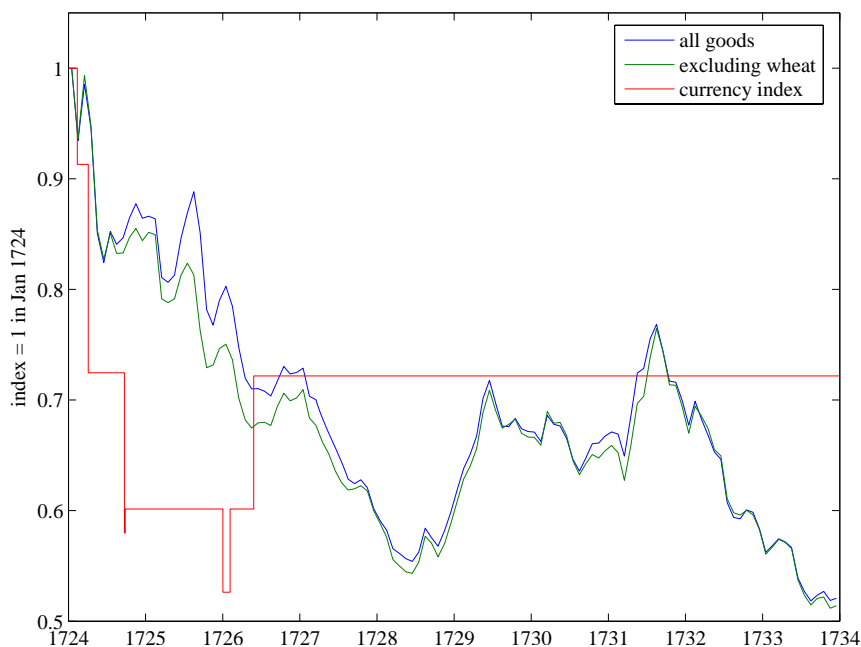


Figure 7: Seasonally adjusted index of six commodities sold on the Paris *Halles*market, monthly data, 1724–1733.

before raising the dividend to a new, permanently higher level.⁹⁰

Commodity markets

When Dutot ([1738] 1935) wrote his response to Paris-Duverney, he attacked the deflationary policy, in part because, he claimed, prices failed to adjust. He provided data on prices in the Paris market for wheat, bread, eggs, pork, candles and butter: monthly averages for 1724–26 and daily prices for the months in which diminutions or augmentations occurred (February, April and September 1724; January, February and May 1726).⁹¹ The source he cites, a manuscript compilation of bi-weekly market prices, has survived (although the volume for year 1724 has disappeared).⁹²

⁹⁰AN G/7/1705.

⁹¹He also provided daily data for the wheat crisis period of August and September 1725. The price he reports for wheat and bread is the maximum quoted price; for other goods it is an average of the day's high and low.

⁹²The manuscript is Bibliothèque de l'Institut, Paris, mss. 513-521, and covers the years 1725 to 1733. Another copy of the year 1727 is in the Bibliothèque nationale. The catalogue of Dutot's library, sold

This original source is much more detailed than the data provided by Dutot (it contains prices for a half-dozen grains, as well as various other foodstuffs, twice a week), but since the 1724 volume is now missing, I can only extend the monthly averages for the six commodities chosen by Dutot to cover the full period of diminutions. Figure 7 plots an index of these six commodities, as well as an index excluding wheat. The stepwise graph represents the index of the livre's ME.

The graphs make clear that the market prices of commodities did not react instantaneously to the diminutions; nor did they react fully, even over a one or two-year horizon.

Dutot also provided prices from each market day (twice a week) for the months in which the diminutions took place (see Table 4). An asterisk identifies the first market day after each diminution. The lack of reaction of prices is apparent.

It should be noted that the grain markets were very much competitive, uncontrolled markets. The government was extremely weary of interfering with market mechanisms when it came to grains, and did so only in periods of emergencies: and even then, it tried to do so (as in 1725) by shipping large quantities of grains from other provinces or abroad, rather than by controlling prices directly. In normal times, the marketplace saw hundreds of buyers and sellers meet twice a week and carry out their business unfettered, except for a regulation requiring them to use the offices of official measurers when the trade was concluded.⁹³

The textile industry: prices, output and wages

The sources on the textile industry

As explained above, the inspectors of manufactures sent a report to Paris twice a year. For reasons unknown to me, many of the reports have not survived in the archives. The cloth industry for which most reports are available is the woolen industry.⁹⁴ This is therefore the industry on which I focus. It represented somewhere between 15 and 20% of all French industry in the 18th century, and which itself accounted for 33 to 40% of total output (Daudin 2005, 34, 39).

after his death, lists a manuscript *État des grains vendus à Paris, 1724-1727*.

⁹³The measurers provided a third-party verification of the quantity and quality of the grain purchased. They reported prices and quantities every market day to the market authorities, and are the ultimate source for the price and quantity data of the Institut manuscripts.

⁹⁴A few more reports can be found for the linen industry; they will be added to this study.

		wheat			bread		eggs	pork	candles	butter	
		high	low	mode	high	low	avg	avg	avg	avg	
Feb 1724	1	25.5			3.75		52.5	6.75	14.5	95	
	5	25.5			3.75		52	7.75	14.5	75	
	9	25			3.5		57.5	7.75	14.5	80	
	*	12	24.25		3.5		65	7.75	14.5	85	
		16	24.5		3.5		70	6.75	14.5	85	
Apr 1724	1	27.5			3.25				14.5	85	
	*	5	23.5		3.25				14.5	85	
		8	25		3.25				14.5	92	
		12	24.5		3.25				14.5	90	
Sep 1724	6	25			3		29	6.75	10.5	60	
		9	25.25		3		29.5	6.75	10.5	63	
		13	26.5		3.25		30	6.75	10.5	60	
		16	27.25		3.25		34	6.75	10.5	72	
		20	26.75		3.25		34	6.75	10.5	66	
	*	23	25		3.25		35	6.75	10.5	65	
		27	25.75		3.25		32	6.75	10.5	63	
		30	26		3.25		36.5	6.75	10.5	65	
May-Jun 1726	15	24.5	12	20	2.75	2.5	24	5.75	9.75	46	
		18	24	12.5	18.25	2.75	2.5	23	5.75	9.75	46
		22	24	12	19	2.75	2.5	25	5.75	9.75	46
		25	23.25	12	18.5	2.75	2.5	23.5	5.75	9.75	46
	*	29	23.25	12	20.5	2.75	2.5	23.5	5.75	9	43
		1	23.25	12.5	19.9	2.75	2.5	23.5	6	9	42
		5	23.25	13	21	2.75	2.5	25	6.25	9	
		8	23.25	13	22	2.75	2.5	24.5	7.25	9	42
		12	23	13	21	2.75	2.5	23.5	6.75	9	40

Table 4: Prices of various commodities at the Halles market, each market date, February, April and September 1724. The asterisk marks the first market date after each diminution. The units are sous per pound for bread, pork and candles; livres per bushel (*septier*) of wheat, per hundred pounds of butter, and per thousand eggs. Source: (Dutot [1738] 1935, 76), Institut mss. 514.

The report listed each town or area where manufactures were located, the types of cloth they produced (length and width), the type of wool used, prices of wool, prices of cloth per bolt or per ell, the number of producers, number of working and idle looms, and number of bolts of cloth produced. The reports will eventually allow me to compute price and quantity indices on a semi-annual basis. But, as noted, many reports are missing. Some of the missing information can be filled in, in the following manner. For each district, the report concludes with a total of looms working and bolts of cloth produced, and compares with the same numbers from the previous semester.⁹⁵ Thus I have more data on looms working and bolts produced (although the bolts can be of very different lengths) than I have full reports. As a first step, I construct indices for these two series first.

To deal with the unbalanced panel, I use a state-space model. For each collection of regional series (bolts produced, looms working), a general index is modeled as a common factor with local linear trend (Harvey 1989) The model, which allows for seasonality, and includes the Hodrick-Prescott filter as a special case, is described in the appendix. The purpose of the exercise is to represent the data in a parsimonious way, rather than fit a statistical model. Hence, and given the small amount of data, I keep the number of parameters small, and estimate them by maximum likelihood.

Results

Figure 8 shows the working looms series for each district (log-normalized) and the computed index. Figure 9 presents the analog for bolts of cloth.⁹⁶ The districts represented (23 in all) cover almost all of France, although the data is fragmentary as can be seen from the graph.⁹⁷

The two indices are shown, with standard error bands, on the same graph in Figure 10. They are remarkably close, particularly for the period of interest for which there is a lot of available data. The uncertainty is greater at the beginning and at the end of the period, where fewer reports have survived.⁹⁸

⁹⁵By the late 1720s, as the government realized that there was a seasonal pattern in the data due to agriculture's competing use of labor during the summer, numbers from the same semester in the previous year also appear.

⁹⁶The number of working looms can be interpreted as an observation at a point in time, usually toward the end of the semester. the number of bolts produced corresponds to the production over the semester.

⁹⁷The percentage of available observations is 34% for 1714:s1 – 1739:s2, or 45% for 1716:s1 - 1730:s2.

⁹⁸For reasons that are unclear, the surviving reports in the archives become sparse in the 1730s and 1740s.

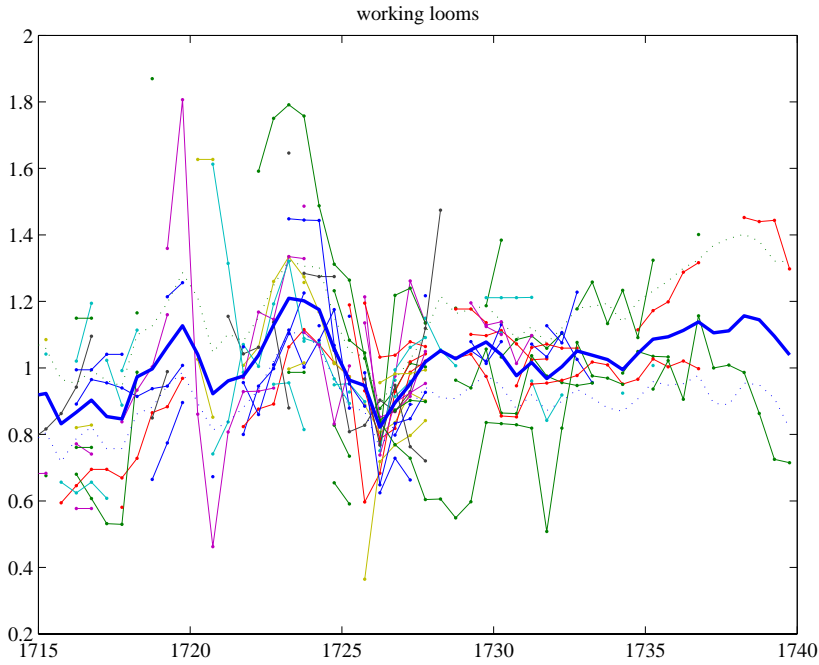


Figure 8: Number of working looms in the various districts of France (each series normalized by its sample :

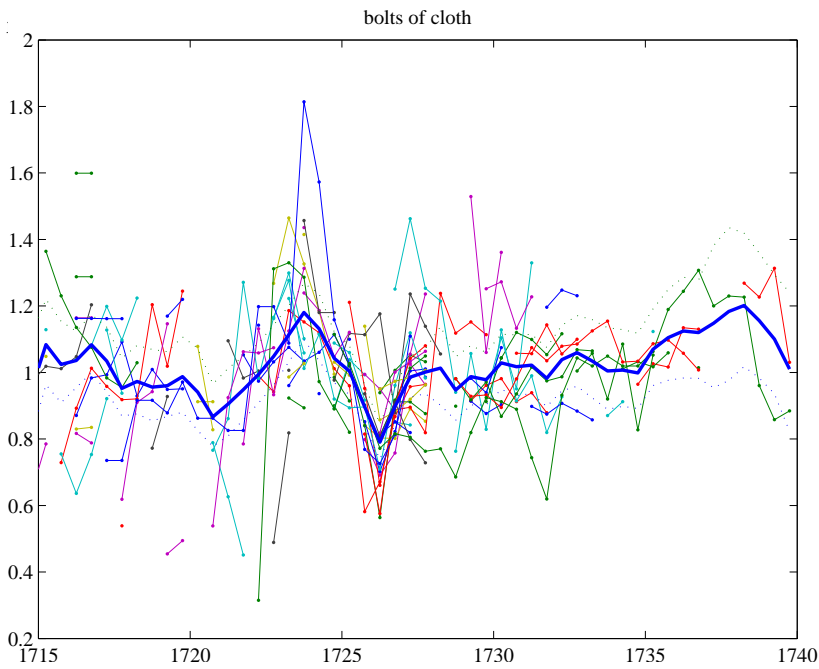


Figure 9: Number of bolts of cloth produced in the various districts of France (each series normalized by its sample mean). the thick line is a national index.

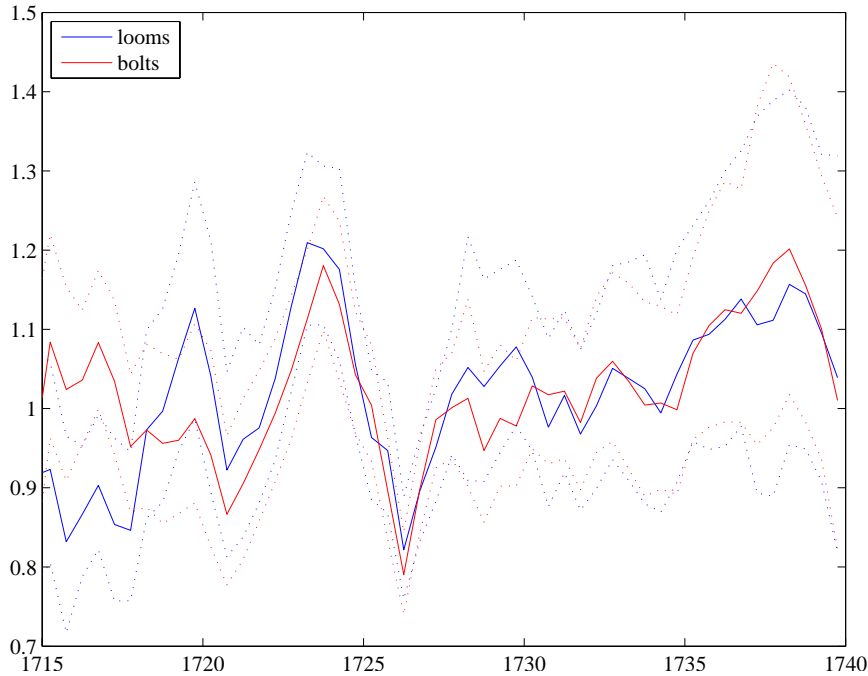


Figure 10: Index of working looms and index of bolts produced.

The series show little or no trend over the 25 years covered. Some (possibly insignificant) fluctuations appear throughout the period, but two sharp recessions are noticeable, one in 1720 during the collapse of John Law's system, the second during the period under study. The magnitude of the decline from mid-1723 to mid-1726 is almost the same for both indices, about 32–33%. This was a substantial recession, if not a depression.

It is also interesting to note that the sharp rebound from the 1720 crisis seemed to peak in either the first or the second half of 1723. This confirms the qualitative picture given above of very strong activity up to 1723, but it suggests that the onset of the recession may have coincided with, or even preceded, the beginning of the deflationary policy.

Preliminary results suggest that these aggregate series, which do not account for differences in prices between the various bolts of cloth, nevertheless give a reasonably good picture. I have computed a common index for 12 price-weighted series of ells

They are more abundant for the end of the century. Computing an index of activity in the woolen industry up to 1789 is feasible, but beyond the scope of this study.

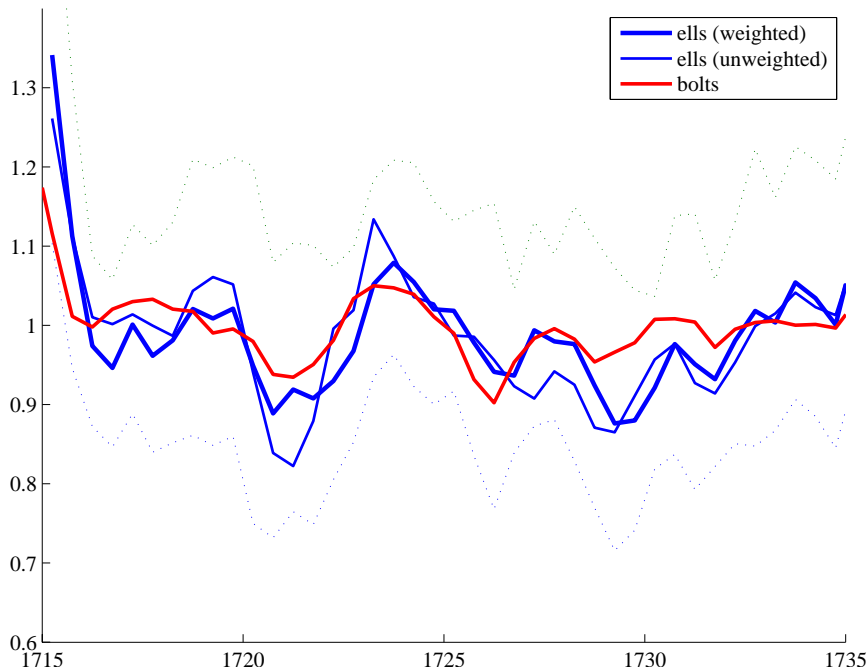


Figure 11: Comparison of weighted and unweighted quantities of cloth produced for a sub-sample of districts.

produced, as well as for the same series but unweighted, and for the corresponding number of bolts (bolts were of different lengths depending on the type of cloth). The comparison is shown in Figure 11.

Producer prices

For the same 12 series, I have computed a common index of quantity-weighted prices. The quantities are measured in ells, prices are in units of account per ell. (I ignore differences in width). The result is shown in Figure 12. I also plot an index of the diminutions, set to coincide with the price index in 1723:s2. It is apparent that prices fell for two years, and never fully adjusted to the diminution. In 1726:s2, however, there is a noticeable uptick in prices.

Wages

The government was particularly concerned about the evolution of wages, which it saw as key to lowering the price of manufactured goods because high wages were a frequent

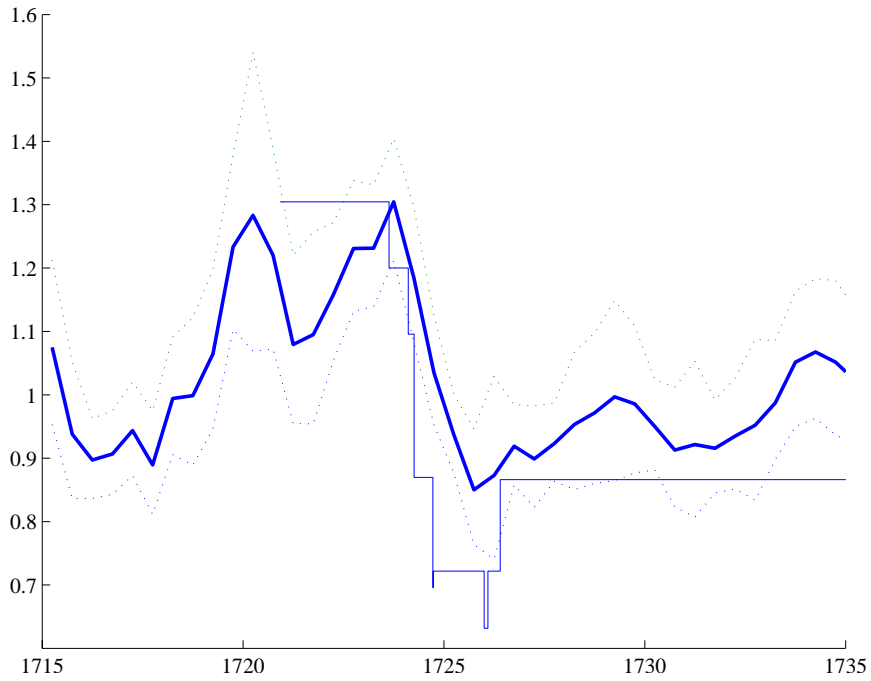


Figure 12: Weighted price index of bolts for a sub-sample of districts.

	1712	1716	1719	1723	July 1724	Dec 1724	1726:s1	1726:s2
wages								
Carcassonne	1.00	0.91	1.25	1.27	1.26	0.82	0.78	0.88
Montagne	1.00	0.86	1.03	1.23	1.24	0.91		
Mazamet	1.00	1.02	1.03	1.48	1.49	1.04		
Dourgne	1.00	1.05	1.08	2.07	1.79	1.43		
all	1.00	0.89	1.12	1.27	1.26	0.88		
output prices								
Carcassonne	1.00	0.87	1.94	1.53	1.31	0.91	0.84	1.10
w/p	1.00	1.04	0.64	0.83	0.96	0.91	0.94	0.80
ME	1.00	1.00	1.50	1.88	1.25	1.04	1.04	1.24

Table 5: Wages in the woolen industry of the Carcassonne district. Source: AN F/12/556.

pretext for keeping output prices up.⁹⁹ Many inspectors and intendants reported that wages remained high (although some, as in Alençon and Alsace, said they were reasonable), and in Provence workers were said to rebel and collude against any attempt at lowering wages. The reasons given vary. As we saw, the government believed that collusion was at play in some instances. Many said that the high price of foodstuffs drove up the subsistence wage. Some intendants argued that the demand for labor was higher, either in agriculture (Provence) or in manufacturing where employers were bidding up wages (Auch and Pau), particularly new entrants (Languedoc, Poitiers). The intendant in Soissons pointed to a lower supply of labor, due to two causes. One was demographic, namely an undersize age class due to the wars that occurred 15-20 years before. The other was an income effect: since 1719, workers were used to living well, and it took much higher wages than before to convince them to provide additional labor: “since day laborers earn in three days enough to feed their families for a week, they have to be bid up and will not be moved to work the rest of the week except with high wages and even then one does not always convince them.”¹⁰⁰ This idea, sometimes expressed as a sort of habit persistence, is echoed by a senior official of the finance ministry during a meeting of the the Trade Council on Oct 19, 1724 when he complained that laborers in the textile industry had grown accustomed to living better than befits their station; the finance minister also claimed that workers had acquired expensive consumption habits.¹⁰¹

Although Dodun had sent detailed instructions for wages to be collected, I have found very little data in the surviving archives. Only one report, for the district of Carcassonne, contains abundant data not only on wages, but also on the costs of all other inputs, and on number of laborers, for selected years.¹⁰² Carcassonne’s woolen industry was very large. It produced a range of cloths, mostly of middle and high quality for export to the Near East, and lower quality for domestic consumption.

⁹⁹AN G/7/32, Aug 30, 1724.

¹⁰⁰Alençon, G/7/1704, n.246; Alsace, G/7/444 20 Oct 1724; Auch-Pau, G/7/121-123, n.181; Languedoc and Provence, G/7/789, 30 Oct 1724; Soissons, G/7/513, n. 251. The intendant in Soissons even considered fiscal policy to increase the labor supply, but raising the lump-sum *taille* levied at the parish level would only fall on farmers and yeomen because they were outnumbered by the day laborers and tax collectors found it easier to collect from them. This intendant, named Orry, was finance minister from 1730 to 1745.

¹⁰¹AN F/12/71*/3/223; BN Fr8362, fol. 108.

¹⁰²The dates are 1712, 1716, 1719, 1723, 1724 before and after the September diminution. Another report contains wage data for the first and second semesters of 1726, although the categories of laborers and the units in which wages are expressed do not match exactly.

The data is provided for various districts: Carcassonne and nearby towns (where the exporters were concentrated), the Montagne of Carcassonne, Mazamet, and Dourgne. The wage rates are mostly expressed as piece rates (by weight of wool, length or bolt of cloth) although some are expressed as daily wages. The report also gives the quantity of cloth produced and the quantity of wool needed for each type of cloth. I can infer the quantity of labor provided for each type of labor; in the case of daily wages, I multiply the known number of laborers by the number of working days in a year, assumed to be 240.¹⁰³ This allows me to compute a weighted wage index, although the results are not very different if one uses an unweighted index. The results are shown in Table 5; since I also have the price of output, I compute a ratio w/p .

The data strikingly confirm the qualitative evidence on wages. In particular, from 1723 to July 1724, after the first diminutions had reduced the nominal value of currency by a third, wages had not reacted at all. After the September diminution, they fell by 30%, a substantial fall but still short of the 45% reduction in nominal values. In real terms (deflated by the price of output), they had actually increased. But, after the reversal in June 1726, when the nominal value of coins increased by 20%, wages increased by 12% and output prices by nearly the full amount.¹⁰⁴

From the wholesale markets

Evidence from the regional fairs is more difficult to interpret, since these were wholesale markets which did not have to clear (merchants could and did hold inventories from one fair to the next). Nevertheless, the quantity of cloth brought to the cloth-hall of Paris (the main market for cloth in the city) shows the same pattern as the output series (see Figure 13).

Data from the fairs of Pézenas and Montagnac, held in the south of France near Montpellier, in a major textile-producing area, allow me to compute a quantity-weighted index, shown in Figure 14.¹⁰⁵ The pattern is consistent with the qualitative evidence:

¹⁰³This is based on a comment by the manufacturer Vanrobais that holidays take out a third of the week on average (AD Somme, C158).

¹⁰⁴Compare with the comment from the intendant in Dauphiné in October, 1724, that the main cause of high wages was the “high price of foodstuffs and the fact that workers had grown accustomed to earning too much since 1719 and 1720, a habit they could not forsake and which renders them arrogant” (BN Fr 838I, fol. 73v).

¹⁰⁵The fairs of Pézenas and Montagnac were held five times a year after the holidays of St. Hilary (Jan. 13), mid-Lent, Whitsunday, Holy Cross (Sep. 14) and St. Martin (Nov. 11).

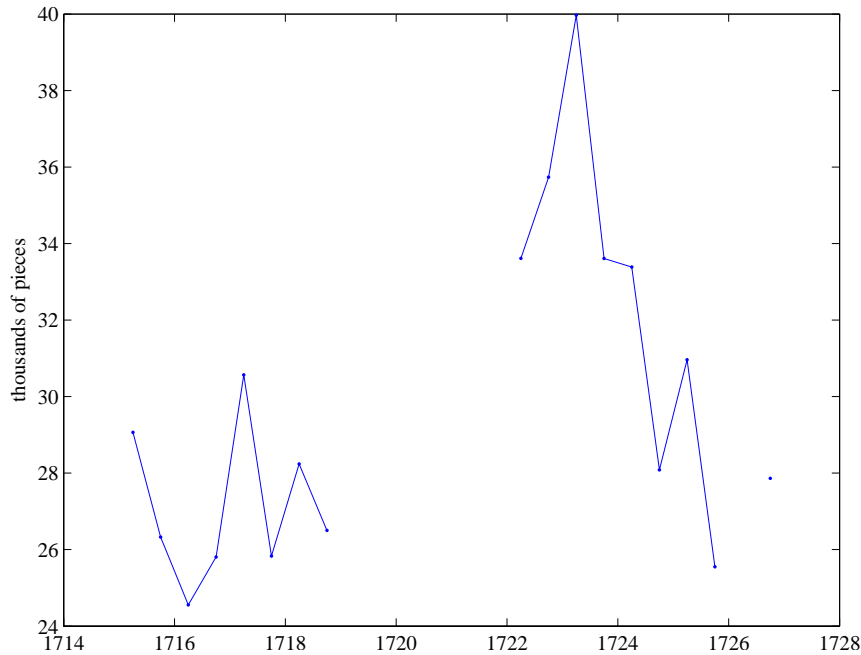


Figure 13: Number of bolts of cloth brought to the cloth-hall of Paris, by semester, 1716:I to 1726:II. Source: F/12/1362A, F/12/1239, G/7/792.

prices fell, but slowly and not by the full extent (18% instead of 45%). They also show a strong rebound in the month that followed the augmentation of May 1726. The behavior of prices seems to have been asymmetric, at least at the fairs.

Figure 15 is based on notations made at the cloth-hall of Rouen (*halle foraine*). It is a survey of the prices of all cloths brought to be sold each month. It has the advantage of coverage at high frequency over all types of cloth (there are 58 different types of cloths, and the average ratio of dearest to cheapest is 40). Unfortunately, it only starts in January 1725, when the deflation was already underway, and there are no quantities, so the index cannot be weighted. I normalize all series by their sample mean, and construct two indices, using each month's mean and median (Figure 15). Again, the pattern is the same: slow and steady but incomplete price decrease, followed by a sharp rebound (8% for the median, 11% for the mean) in June 1726, right after the augmentation.

Finally, comparisons of prices for a broad range of cloths, from low to high quality, can be found for certain fairs and for the period of deflationary policy of 1724 (Table 6). Prices fall on average by around 30%, less than the value of coins; there is even a rebound in prices in mid-1724, as noted by some inspectors.

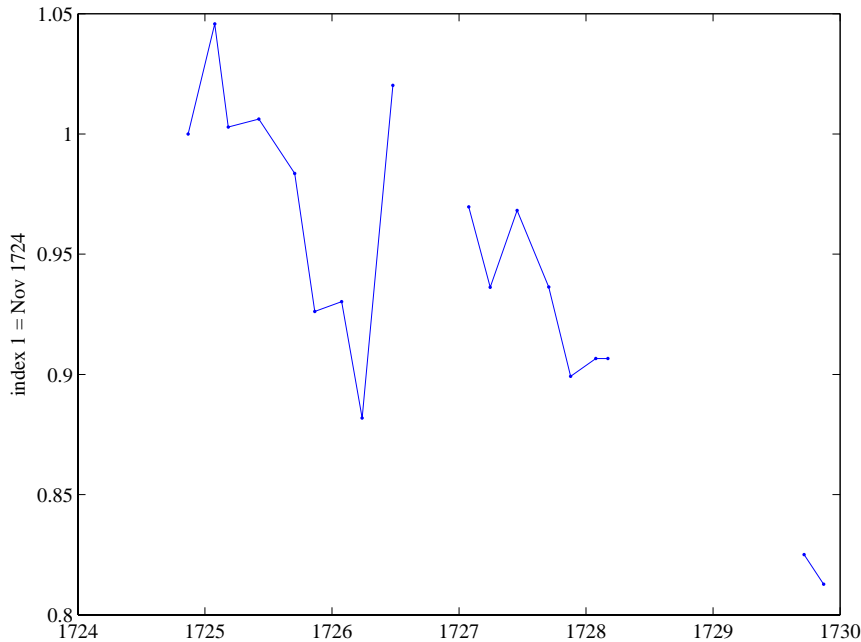


Figure 14: Chain-weighted price index of cloths brought to the fairs of Pézenas and Montagnac, 1724–29. Sources: AN F/12/1237, F/12/1380, AD Hérault C.2345.

Conclusion

The peculiarities of the French monetary system allowed its government to conduct a series of unforetold reductions in the nominal money supply by a total 45% over a period of a few months. The aim of the policy was to reduce the price level to what was thought to be an appropriate level. This rather dramatic attempt at price level targeting was not successful. Although prices and wages did fall, they did not do so by the full 45%; moreover, it took them months, if not years, to fall that far. Real wages in fact rose, at least initially. Interest rates rose. The only market that adjusted instantaneously and fully was the foreign exchange market. Even markets that were as close to fully competitive as one can imagine, such as grain markets, failed to react initially. There is also some suggestive evidence that some prices reacted more sharply to the reversal of monetary policy that took place in 1726.

At the same time, the industrial sector of the economy (or at any rate the textile industry) went into a severe contraction, by about 30%. The onset of the recession may have occurred before the deflationary policy began, but it was widely believed at

	ME	Prices		
		mean	median	std dev
factory prices for 16 cloths				
1716–17 to Jan 1724	+72	+70	+67	11.7
Jan 1724 to Apr 1724	-27	-13	-14	5.3
Apr 1724 to Oct 1724	-17	-14	-13	6.4
prices at the Amiens cloth-hall for 107 cloths				
Jan 1724 to Oct 1724	-40	-25	-25	6.5
prices in Lyon for 11 silks				
Dec 1723 to May 1724	-26	-32	-43	5.7
prices in Lyon for 44 silks				
before Sep 1724 to Nov 1724	-20	-16	-16	6.5
prices at the Clermont fair for 42 cloths				
May 1724 to Aug 1724	0	7	5	6.7
prices at the St. Germain fair for 22 cloths				
Feb 1724 to Feb 1725	-40	-33	-33	6.0
prices in Rouen for 36 goods				
Sep 1724 to Oct 1724	-17	-12	-12	6.1
prices in Orléans for 34 goods				
Sep 1724 to Nov 1724	-17	-12	-10	13.6
Sep 1724 to Dec 1724	-17	-23	-18	19.8
Sep 1724 to Jan 1725	-17	-23	-18	19.6
Sep 1724 to Feb 1725	-17	-26	-21	19.8
Sep 1724 to Mar 1725	-17	-27	-24	19.7
Sep 1724 to Apr 1725	-17	-28	-24	19.1

Table 6: Percentage changes in cloth prices, compared with the percentage change in ME over the same period. Sources: F/12/681, n. 139, F/12/551-553 (factory prices); G/7/97 n. 242-44 (Amiens); G/7/1707 n. 142, G/7/368-373 (Lyon); G/7/422, n. 303-09 (Orléans); G/7/503, n. 254 (Rouen); F/12/1234B (Saint-Germain); F/12/1376 (Clermont).

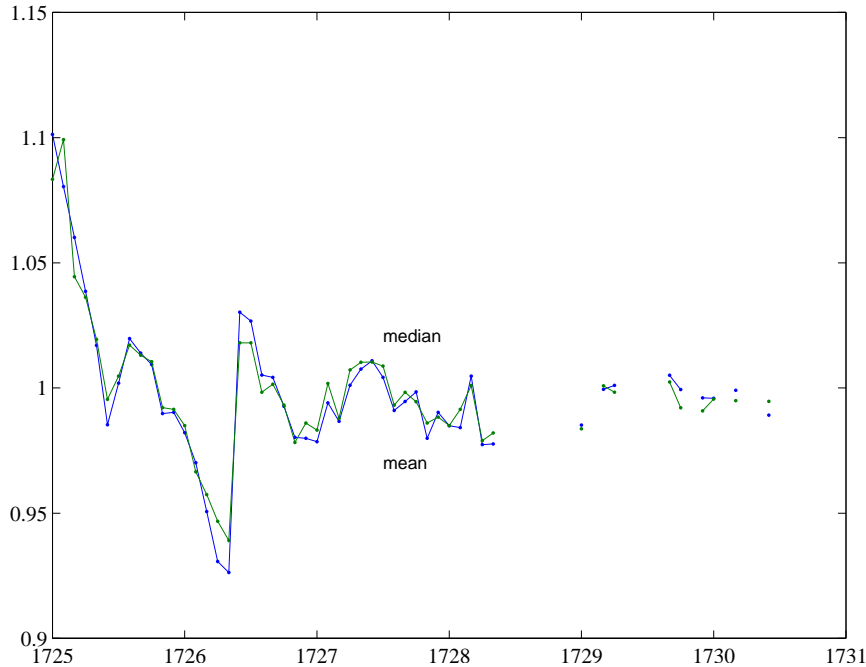


Figure 15: Unweighted price indices of cloths brought to the cloth-hall of Rouen, monthly May 1725–Sep 1732. Source: AN F/12/1367.

the time that the severity of the contraction was due to monetary policy, in particular to a resulting “credit crunch” as holders of money stopped providing credit to trade in anticipation of further price declines (the “scarcity of money” frequently blamed by observers). Likewise, it was widely believed (on the basis of past experience) that a policy of inflation would halt the recession, and coincidentally or not, the economy rebounded once the nominal money supply was increased by 20% in May 1726.

There are two ways one can think of this experiment. One is to view the monetary regime as a fixed exchange rate between the French unit of account and an internationally traded currency (silver). The experiment is an overnight change in the peg. The nominal exchange rate adjusted immediately; but domestic prices did not respond immediately, even for imported goods. Some intendants were not surprised by this: Orry in Soissons thought that it the price of foodstuffs produced and consumed domestically was not set by the nominal level of the currency, but rather their relative abundance.¹⁰⁶ Another way to think of the experiment is an overnight reduction in the nominal quantity of

¹⁰⁶AN G/7/513, n. 251.

money; the resulting behavior of prices appears to be a massive failure of the quantity theory. At any rate, the determination of the price level under a commodity standard is not as simple as one might have thought.

The experiment is not as clean as one might wish, of course. The main difficulty is accounting for expectations of future policy. While the timing and magnitude of the reductions in money supply (or equivalently in the nominal value of coins) was not known in advance, it was customary for governments to attempt a return at a “normal” price level after periods of monetary disturbances, although in previous cases the deflation was always pre-announced and much more gradual. That the economy would suffer from such a policy was expected from the earlier instances of deflationary policy (particularly the most recent one, in 1715). The government in 1724 wanted to avoid prices rising in anticipation of the diminution. Only the last diminution in September 1724 was declared to be the last, precisely because the government had become convinced that expectations of further diminutions were preventing prices from falling.

After citing Hume, Lucas (1996) presents a model that can account for Hume’s empirical observation that money can have real effects, at least in the short run. The model is that of Lucas (1972), an overlapping generations model where the old receive a monetary injection proportional to their money holdings, and where the young do not learn of it until after markets have cleared. But Hume’s observation is none other than the magical experiment I have documented, and in that experiment, no one, young or old, could plead ignorance or confusion. Another model is needed, one perhaps where units of account matter.

Appendix A: the sources

Sources on woolens (reports of the inspectors):

Alençon : F/12/561, 1369A
Amiens : F/12/563, 1351; AD Somme C 153
Auch : F/12/556, F/12/1378
Auvergne : F/12/1376
Aumale : F/12/560, 1368; AD Rouen C126; AD Somme C171
Beauvais : F/12/562, 1362A, G/7/1708
Bourges : F/12/554, 649, 1373
Bretagne (basse) : F/12/555
Bretagne (haute) : F/12/555, 1370
Caen : F/12/561, 1369B
Carcassonne : F/12/556, 1381, 1382; AD Hérault C2476, 2477, 2478
Castres, St-Pons : F/12/1382; AD Hérault C2122, 2128, 2476, 2490, 2493
Champagne : F/12/1359
Dreux : F/12/649
Foix : F/12/556, 1378
Granvilliers : F/12/563, 1354
Limousin : F/12/1376, 1382
Montauban : F/12/1378
Montpellier : F/12/556, 1380; AD Hérault C2127, 2128, 2476, 2493, 2498
Moulins : F/12/554
Nîmes : F/12/556, 1382; AD Hérault C2449
Orléans : F/12/562, 649, 1374
Poitiers : F/12/564-565, 1371
Reims : F/12/555, 1360
Rouen : F/12/560, 1363, 1366
Saintonge : F/12/564-565, 1376
Sedan : F/12/1356-57
Sologne : F/12/554, 562, 649, 1373
Toulouse : F/12/556, 1382; AD Hérault C2468, 2469, 2471
Troyes : F/12/1359

Other sources:

AN G/7/31 to 36: letters of Dodun (1723–26)
correspondance of the intendants with Dodun: see footnote 48

G/7/787 to 792: minutes of matters sent to the minister (1723–26)

G/7/1468, 1472: coinage

G/7/1704 to 1708: misscellaneous correspondance

F/12/71 to 73, 681 to 682, 695 to 696: Bureau de commerce

F/12/1228 to 1243: fairs

Bibliothèque de l’Arsenal: 10832, 10846, police files ; 3857: works of Melon

Affaires étrangères, Mémoires et Documents, France 1252, 1256, 1258

Appendix B: The Model

Let Y_{it} be the original series (the units are either bolts of cloth or looms working). Let y_{it} be some transformation of the data (to be specified below). The model is

$$\begin{aligned}y_{it} &= \lambda_i \mu_t + g_t + \epsilon_{it}, \\g_t &= - \sum_{i=1}^{s-1} g_{t-i} + \omega_t, \\\mu_t &= \mu_{t-1} + \nu_t + \xi_t, \\\nu_t &= \nu_{t-1} + \zeta_t\end{aligned}$$

with $\epsilon_{it} \sim (0, \sigma_\epsilon^2)$, $\omega_t \sim (0, \sigma_\omega^2)$, $\xi_t \sim (0, \sigma_\xi^2)$, $\zeta_t \sim (0, \sigma_\zeta^2)$. The variance σ_ζ^2 is normalized to 1, the others are estimated by maximum likelihood. The number of seasons is $s = 2$.

Denote \bar{y}_i the sample mean of $\log(Y_{it})$ and $\bar{\sigma}_{yi}$ the sample standard deviation. The data is transformed as

$$y_{it} = \frac{\log(Y_{it}) - \bar{y}_i}{\bar{\sigma}_{yi}}.$$

The loading factors are set to 1. The filter is initialized with a diffuse prior (Koopman 1997). The resulting index is scaled by the average standard deviation of the series.

When the variances σ_ξ^2 and σ_ω^2 are set to 0, then the series μ_t is the trend produced by the Hodrick-Prescott filter.

References

- Akabane, Hiroshi. 1967. La crise de 1724–25 et la politique de déflation du contrôleur général Dodun : analyse de l'aspect monétaire d'un type de crise économique. *Revue d'histoire moderne et contemporaine* 14 (3):266–83.
- Alogoskoufis, George S. and Ron Smith. 1991. The Phillips Curve, the Persistence of Inflation, and the Lucas Critique: Evidence from Exchange-Rate Regimes. *American Economic Review* 81 (5):1254–75.
- Antoine, Michel. 1970. *Le Conseil du roi sous le règne de Louis XV*. Geneva: Droz.
- . 1978. *Le gouvernement et l'administration sous Louis XV : dictionnaire biographique*. Paris: Éditions du Centre national de la recherche scientifique.
- . 2003. *Le cœur de l'Etat : surintendance, contrôle général et intendances des finances, 1552–1791*. Paris: Fayard.
- Antonetti, Guy. 1990. La crise économique de 1729–31 à Paris d'après les règlements de faillites. *Histoire économique et financière de la France: Études et documents* 2:35–181.
- Babeau, Albert. 1891. La lutte de l'État contre la cherté en 1724. *Bulletin du Comité des travaux historiques et scientifiques, Section des sciences économiques et sociales* 9 (1):64–65.
- Barbier, Edmond-Jean-François. 1857. *Chronique de la Régence et du règne de Louis XV (1718–63)*. Paris: Charpentier.
- Bonnassieux, Pierre and Eugène Lelong. 1900. *Conseil de commerce et Bureau du commerce 1700–1791. Inventaire analytique des procès-verbaux*. Paris: Imprimerie nationale.
- Bordo, Michael D. 1995. Is There a Good Case for a New Bretton Woods International Monetary System? *American Economic Review* 85:317–22.
- Buvat, Jean. 1865. *Journal de la Régence (1715–1723)*. Paris: H. Plon.
- Daudin, Guillaume. 2005. *Commerce et Prospérité: La France au XVIIIe siècle*. Paris: PUPS.
- Dureng, Jean. 1911. *Le Duc de Bourbon et l'Angleterre (1723–1726)*. Paris: Hachette.
- Dutot. [1738] 1935. *Réflexions politiques sur les finances et le commerce*. Paris: E. Droz.
- . 2000. *Histoire du Système de John Law (1716–1720)*. Paris: Institut national d'études démographiques.
- Funck-Brentano, Frantz. 1903. *Les Lettres de cachet à Paris: étude suivie d'une liste des prisonniers de la Bastille (1659–1789)*. Paris: Imprimerie nationale.
- Gayot, Gérard. 1998. *Les Draps de Sedan : 1646–1870*. Paris: École des Hautes Études en Sciences Sociales.
- Gille, Bertrand. 1980. *Les Sources statistiques de l'histoire de France, des enquêtes du XVIIe siècle à 1870*. Geneva: Librairie Droz.

- Glassman, Debra and Angela Redish. 1988. Currency Depreciation in Early Modern England and France. *Explorations in Economic History* 25 (1):75–97.
- Harvey, Andrew C. 1989. *Forecasting, Structural Time Series and the Kalman Filter*. Cambridge: Cambridge University Press.
- Hume, David. 1752. *Political Discourses*. Edinburgh: R. Fleming.
- Kaplan, Steven L. 1985. The Paris Bread Riot of 1725. *French Historical Studies* 14 (1):23–56.
- Koopman, Siem Jan. 1997. Exact initial Kalman filtering and smoothing for non-stationary time series models. *Journal of the American Statistical Association* 92 (440):1630–38.
- Lucas, Jr., Robert E. 1972. Expectations and the neutrality of money. *Journal of Economic Theory* 4 (2):103–24.
- . 1996. Nobel Lecture: Monetary Neutrality. *Journal of Political Economy* 104 (4):661–682.
- Marais, Matthieu. 1863–68. *Journal et Mémoires*. Paris: Firmin Didot.
- Marion, Marcel. 1913. Un essai de politique sociale en 1724. *Revue du dix-huitième siècle* 1 (1):33–34.
- Melon, Jean-François. 1736. *Essai politique sur le commerce*. N.p.: n.p., 2nd ed.
- . 1977. *Opere (vol. 1)*. Pisa: Libreria testi universitari.
- . 1983. *Opere (vol. 2)*. Siena: Stamperia dell'Università di Siena.
- Minard, Philippe. 1998. *La Fortune du colbertisme : état et industrie dans la France des Lumières*. Paris: Fayard.
- . 2000. Colbertism Continued? The inspectorate of Manufactures and Strategies of Exchange in Eighteenth -Century France. *French Historical Studies* 23 (3):445–464.
- Paris-Duverney, Joseph. 1740. *Examen du livre intitulé Réflexions politiques sur les finances et le commerce*. The Hague: V. & N. Prevôt.
- Romano, Ruggiero. 1957. Documenti e prime considerazioni intorno alla "balance du commerce" della Francia dal 1716 al 1780. In *Studi in onore di Armando Saporì, 1267–1300*. Milan: Istituto Editoriale Cisalpino.
- Thomson, J. K. J. 1982. *Clermont-de-Lodève, 1633-1789 : Fluctuations in the Prosperity of a Languedocian Cloth-Making Town*. Cambridge: Cambridge University Press.
- Velde, François R. 2003. Government Equity and Money: John Law's System in 1720 France. Working paper 31, Federal Reserve Bank of Chicago.
- . 2006. French Public Finance Between 1683 and 1726. Working paper, Federal Reserve Bank of Chicago.

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