
PROBLEMS

Monetary Inflation in Spain, 1800-1970

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This is an essay on the interrelationships between prices and money in Spain from 1800 to the present. To start with, we want to make a few disclaimers. First, although this paper is based upon quantitative research, our monetary series is perforce fragmented and therefore what conclusions we can submit must be based upon a mixture of quantitative, qualitative, and institutional analysis. Second, although the price series seems to be longer and to show less lacunae, the reliability of the figures corresponding to earlier years is subject to very serious qualifications as will be made clear later on. Third, we only want to draw the barest outlines of a long research project in which several other scholars have worked and are still working. We are summarizing the work of several other people as well as our own. Fourth, although some portions of the picture are fairly clear by now, the total ensemble is far from complete. Among other consequences, the conclusions have to be modest and provisional.

We will first offer a brief summary of the nature and sources of our data. Then, we will examine the main traits of our series, dividing it into several chronological periods; this will be followed by a brief conclusion. The tables and a short bibliographical appendix are placed at the end.

NATURE OF THE DATA.

First of all, the monetary unit used throughout is the peseta. It became the official unit in 1868 and was widely used and recognized in official statistics only a few years later. Our monetary series is undeflated, i.e., in current pesetas.

Prices. Our price index is a composite of three main indices juxtaposed. From 1913 to the present we have the official price index, compiled by the Instituto Nacional de Estadística. For the 1890-1913 period we have the Comisión del Patrón Oro (Gold Standard Committee) price series. The Gold Standard Committee was made up of a group of experts summoned in 1929 to study the feasibility of restoring the gold standard. It carried out a pioneer « econometric » study of money and prices and, among other things, compiled a consumer price index starting in 1890 and ending in 1929. This index was used as a basis for its own work by the Instituto Nacional de Estadística. From 1812 to 1890 we have the Sardá index, which is a crudely weighted consumer price index for Barcelona, based on nine products. Due to the fragmented nature of the Spanish economy in the nineteenth century, the national validity of this index is open to question.

Money Supply. The series for the period 1874-1914 has been compiled by a group of monetary historians at the Bank of Spain under the direction

TABLE I

SPANISH PRICES, 1812-1873
(1913 = 100)

1812	224.44	1843	70.14
1813	179.62	1844	76.46
1814	142.91	1845	73.27
1815	159.72	1846	83.24
1816	161.71	1847	91.90
1817	172.75	1848	88.93
1818	150.05	1849	74.85
1819	129.12	1850	76.26
1820	111.36	1851	79.65
1821	103.90	1852	77.85
1822	113.96	1853	73.15
1823	103.57	1854	79.36
1824	108.07	1855	86.05
1825	107.60	1856	95.60
1826	102.78	1857	98.32
1827	88.14	1858	83.38
1828	86.01	1859	96.91
1829	76.03	1860	95.01
1830	75.45	1861	94.63
1831	81.23	1862	101.92
1832	83.18	1863	115.57
1833	80.30	1864	119.70
1834	89.27	1865	111.32
1835	96.27	1866	119.54
1836	95.97	1867	110.83
1837	97.72	1868	98.36
1838	91.00	1869	99.58
1839	90.78	1870	109.28
1840	80.87	1871	91.47
1841	78.17	1872	90.27
1842	82.27	1873	89.87

of G. Tortella-Casares; the series for the period 1915-1935 has been compiled by P. Martínez Méndez, also at the Bank of Spain. Then there is an interruption for the years of the Spanish Civil War. For the years 1940 to the present our series is based upon official statistics, emanating originally from the Bank of Spain, although the official Bank of Spain - Instituto Nacional de Estadística series only starts in 1958. The 1940-1958 series, based upon official data, has been published privately by J. Ros Hombravella *et al.* in *Capitalismo Español* and by H. Paris Eguilaz in *El Desarrollo Económico Español*. For the years prior to 1874, as we shall presently see, the hopes of obtaining an acceptable series are nil.

BEHAVIOUR OF THE TIME SERIES.

1800-1874.

The money supply was largely made up of specie, with gold most likely predominating. Gold and silver coins minted in Spain coexisted with American (mainly New Spain, present day Mexico) pieces, and with other European currencies, mostly French. The American coins had been imported from the colonies before their independence, and French coins had entered Spain in large amounts with the Napoleonic occupation (1808-1814). Spain's secular trade deficit with Europe caused a steady outflow of specie which had traditionally been compensated by a regular inflow of bullion imports from the colonies. When the independence of the colonies caused an interruption of those imports, a chronic trade deficit tended to produce chronic deflation, especially during the first half of the century.

Although the metallic problem was never satisfactorily solved, paper money may have contributed to palliate specie contraction after 1844. Some rather rash experiments in paper money had taken place before that date which need not detain us here. A few banks of issue were founded in 1844 and a brief spurt of paper money circulation took place during the ensuing years in Barcelona and Madrid, only to be cut short by the economic contraction of 1848.

The next spurt took place in 1856-64. Some 20 banks of issue and some 35 other banks were founded during the period, and both kinds of banks issued paper money. The volume of notes issued by the authorized banks is known to us, but not the mass of semi-legal, semi-liquid paper issued by some of the other banks. We know, however, that the money in circulation must have increased during those years due not only to the larger paper-money supply but also to massive French investment in the construction of Spanish railroads at the time. The price index shows a remarkable increase during these years.

This expansion was followed by a ten-year depression which, among other things, entailed a fall in the money supply due to a collapse in the

banking system, the logical public flight from bank money, and an interruption in foreign investment. This was accompanied by a fall in the price level.

To conclude this section we must mention that bank deposits, and of course bank money in general, must have been an insignificant component of the money supply. Furthermore, payment by cheque, still uncommon in Spain today, was a rarity in the nineteenth century.

1874-1914.

The evolution of the money supply during this period is portrayed in Table II.

A first remarkable fact about the mass of money in circulation during this period is how drastically its composition changed. The Spanish money supply underwent a process which was in many ways the reverse of what was happening in the rest of Western Europe and other advanced areas: while these areas tended to adopt the gold standard, Spain abandoned it. This was not a deliberate choice of the Spanish policy makers, but rather the consequence of Spain's own economic weakness.

In the twenty years following 1874, the Spanish circulating stock of gold (about 1,000 million pesetas, the peseta being roughly equivalent to the French franc then) had vanished from circulation, the largest part probably exported, the remainder privately hoarded or sterilized in the vaults of the Bank of Spain. This outflow was the result of two factors: (1) The increase of the price of gold in international markets, and (2) The passivity of Spanish authorities, who kept the official domestic price of gold unchanged. (This price was the old 1/15.5 gold-silver ratio of the Latin Monetary Union, which Spain had adopted in 1868 and never modified). Furthermore, these substantial gold exports were used to finance the repatriation of a large share of the Spanish foreign debt and to pay for a substained balance of payment deficit. When the available gold started to give signs of exhaustion around 1890, the peseta plummeted in the international money markets.

Meanwhile, the void left by gold was filled with paper money: the Bank of Spain had been given the exclusive privilege of issue in 1874 and it made full use of it. Its volume of issue was around 1,000 million pesetas in 1895.

Silver played an interesting role. Spain was legally on a bimetallic standard after 1868. When gold went out of circulation silver remained the *de facto* metallic standard as the main backer of the Bank of Spain's fiduciary circulation and as the specie into which banknotes were in fact converted when requested. But in reality it was a sort of « fiat money » since its nominal value (the Spanish official gold-silver ratio) was far above the international market price. Importing silver into Spain, minting it, and putting it into circulation was, therefore, equivalent essentially to printing paper money, and almost as profitable. The Bank of Spain and the Treasury reaped good profits from the operation. Part of these profits, and other resources, were devoted by

TABLE II

SPANISH MONEY SUPPLY AND PRICES, 1874-1972

Year	Money Supply (Millions of pesetas, end of year)	Prices (1913 = 100)	Year	Money Supply (Millions of pesetas, end of year)	Prices (1913 = 100)
1874	1,738	92.6	1924	8,927	179.2
1875	1,766	84.1	1925	9,010	182.0
1876	1,850	90.7	1926	8,802	166.7
1877	1,828	96.2	1927	9,327	163.6
1878	1,882	93.4	1928	9,652	167.7
1879	1,792	94.9	1929	9,839	167.7
1880	1,880	90.0	1930	10,226	167.0
1881	1,960	90.6	1931	10,156	168.8
1882	1,968	93.9	1932	9,986	166.6
1883	1,997	89.5	1933	9,863	159.1
1884	2,008	81.5	1934	9,946	163.4
1885	2,118	80.5	1935	10,400	164.2
1886	2,101	79.9	1936	—	167.2
1887	2,096	77.0	1937	—	188.5
1888	2,199	78.4	1938 (Civil War)	—	212.0
1889	2,273	79.7	1939	—	241.9
1890	2,287	83.8	1940	—	288.8
1891	2,317	78.0	1941	22,980	341.5
1892	2,222	80.2	1942	26,786	375.4
1893	2,178	78.1	1943	28,776	419.1
1894	1,994	75.2	1944	32,352	450.8
1895	2,137	79.5	1945	36,072	500.3
1896	2,199	75.8	1946	45,191	600.4
1897	2,395	82.4	1947	51,670	704.0
1898	3,286	90.5	1948	53,259	754.1
1899	3,243	92.1	1949	57,798	806.9
1900	3,220	96.7	1950	66,044	952.2
1901	3,229	96.9	1951	77,535	1,223.1
1902	3,063	94.7	1952	85,277	1,233.5
1903	3,141	97.7	1953	91,691	1,321.3
1904	3,074	99.5	1954	102,514	1,327.8
1905	2,945	100.0	1955	117,695	1,379.5
1906	2,884	97.3	1956	141,212	1,505.7
1907	2,875	101.4	1957	164,758	1,756.6
1908	2,785	98.6	1958	189,719	1,929.6
1909	2,904	97.3	1959	198,883	1,970.4
1910	2,926	98.2	1960	197,829	2,014.1
1911	2,973	94.7	1961	223,916	2,066.5
1912	3,129	99.4	1962	265,367	2,168.6
1913	3,208	100.0	1963	310,416	2,262.4
1914	3,320	99.7	1964	368,550	2,327.2
1915	3,849	109.2	1965	426,557	2,563.1
1916	4,345	128.8	1966	477,971	2,629.3
1917	5,370	150.1	1967	543,039	2,643.1
1918	6,856	218.2	1968	609,378	2,703.8
1919	7,742	222.7	1969	698,765	2,771.4
1920	8,727	227.6	1970	739,994	2,816.9
1921	8,579	183.4	1971	915,144	2,977.0
1922	8,414	160.4	1972	1,132,668	3,182.5
1923	8,490	161.6			

the Bank of Spain to purchasing and hoarding gold, probably on the advice of the Finance Ministry and with a view to re-establishing gold standard.

According to our figures, the overall average yearly rate of growth of the money supply for the whole 1874-1914 period was about 1.5 per cent, rather low when compared to other countries in the same period (See Table III).

The reasons for this slow growth of the Spanish money supply are all the more surprising when we reflect that Spain was one of the few European countries where the discipline of the gold standard was not in operation. There were no automatic limitations to the expansion of the Spanish money in circulation. True Spain's chronic balance of payments deficit might have exercised a deflationary influence. But the absence of gold standard in fact isolated the money supply from the vagaries of the foreign sector. This factor must therefore be discarded, at least as a proximate cause.

A more plausible reason for this slow growth may simply be the very gradual development of the Spanish economy, which exercised a weak pull on the monetary mechanisms. The private banking sector remained small throughout the period: the Bank of Spain always held more than half the combined deposits of the banking sector.

The most significant and immediate reason for the arrested development of the money supply was government policy, consistently deflationary at all times, save the years of the Cuban war (1896-98), when military expenditures forced the Government to borrow heavily and forced the Bank of Spain to print large quantities of banknotes. These inflationary years were, however, followed by a decade of drastic deflation. At the time, economic writers and policy-makers lived in horror of exchange-rate devaluation and this made them hold to radically deflationary views. The Bank of Spain was told to hoard increasing reserves of gold, the fiduciary circulation was curtailed, and the idea of restoring the gold standard recurred frequently among finance ministers. The price level, by and large, reflects these changes in the evolution of the money supply.

TABLE III

RATES OF GROWTH
OF THE MONEY SUPPLY IN FOUR COUNTRIES, 1875-1914

	Absolute	Per Capita
Spain	1.5	1.0
England and Wales	2.2	1.1
France *	2.5	2.4
U. S.	6.0	3.9

* 1870-1910.

Sources:

Money: Spain: Table II; England and France: CAMERON, *Banking in the Early Stages*; U. S.: FRIEDMAN and SCHWARTZ, *Monetary Statistics of the U. S.*

Population: Spain: NADAL, *La Población*; England: MITCHELL and DEANE, *Abstract of British Historical Statistics*; France: TOUTAIN, *La Population*; U. S., BUREAU OF THE CENSUS, *Historical Statistics of the U. S.*

1914-1935.

This period can be divided into three sub-periods: (i) 1914-18, inflation, (ii) 1920-29, stability, and (iii) 1930-35, impact of the world depression.

(i) In 1914-1918, the very great increase in Spanish exports, as a consequence of the First World War, had a double inflationary effect: it raised demand as a consequence of profits and wages increases and slowed down the flow of exportable commodities available for domestic consumption and investment. From 1914 to 1917, the price level was multiplied by 1.5. From 1917 to 1918, the increase was even greater (1918 = 220), with an inflation rate of almost 50%.

The money supply trend was equally sharp. Taking the year 1913 = 100 as a basis, the price index is: 1917 = 159 and 1918 = 203.

In fact, the Spanish monetary situation was the result of its special position as non-belligerent in a Europe at war. The great increase of exports produced a substantial inflow of gold (This gold was carefully kept in the Bank of Spain's vaults until the Civil War of 1936-39, when most of it was sent to the USSR by the Spanish Republican Government (some 500 tons) and received by the Soviet Government as payment for arms dispatched to Republicans, in spite of the Franco Government's later claims). In addition to this, the Spanish monetary authorities also contributed to the 1914-18 expansive cycle. The limit of fiduciary money in circulation was augmented from 2,000 millions of pesetas to 5,000. Furthermore, the Government facilitated the liquidity expansion, by permitting the Bank of Spain to accept public debt bonds as collateral for loans to banks. (The credit institutions could buy Public Debt as a semi-liquid asset and then borrow on it at the central Bank, with a discount rate smaller than the interest rate received by the debt bonds).

(ii) In the years 1918-1929 prices rose slowly. From 1924 they fell and in 1928 attained a low point. But in general this sub-period could be defined as stable. These were years of some economic expansion and public works programmes but the needs of the Government were covered by a much better tax collecting apparatus and by bank loans through the already mentioned public debt borrowing mechanism.

(iii) In 1930-36 there was the Great Crash and the fall of the Spanish monarchy. The Republican governments applied a conservative policy in monetary questions. The gold reserve was not touched. The fiduciary circulation was maintained at less than 6,000 millions pesetas and the sub-period was marked by general depression.

1940-1970.

In this period the price level increased 1100 per cent.

With the Spanish Civil War (1936-39) and the Second World War the barriers to inflation and the Gold Exchange Standard (*de facto* or *de jure*) disappeared in Spain as they did in many other European countries.

In fact, the Second World War had for Spain consequences similar to those produced by the First World War. Exports increased and supply could not meet domestic demand. Moreover, the Spanish situation, after the Civil War, was more difficult (from the economic and political points of view) than it had been in 1914-18. This was due, on the one hand, to the destruction and dislocation brought about by the Civil War. On the other hand, the Spanish political regime was viewed by the Allies as a satellite of the Axis, and any possible massive help was ruled out. So the Spanish authorities had recourse to inflationary means for financing their slow and painful process of reconstruction, which in fact was not achieved until around 1953. The consequence of this situation was a steep increase in the money supply and in the price level. After the reconstruction period Spain received substantial foreign help, mainly from the United States in exchange for military facilities. A sustained period of growth ensued, but inflation only became more acute. The chronic balance of payments deficit became larger than ever and by the end of 1958 the country's foreign currency reserves were exhausted. A Stabilization Plan was implemented in 1959 which included a severe curtailment in the growth of the money supply. This was accompanied by a slowing down in the growth of the price index as well.

During the 1960's and early 1970's, both the money supply and the price index have grown at speeds not unlike those of other Western European countries. This similarly reflects Spain's increasing economic ties with Western Europe.

CONCLUSIONS.

There is an obvious long run correlation between the evolution of the money supply and that of the price index.

One of the most striking facts is the impressive increase in the money supply and the price level after 1940, a phenomenon to which we seem to have accustomed ourselves today but which is historically unprecedented in its size and duration. Let us recall that the famed Price Revolution brought about average price increases of 1 per cent per year during the 16th century in Spain, a rate which is synonymous with stability in our inflationary world of the 20th century. If we call the 16th century the Price Revolution, what should we call the 20th?

But facts and factors behind the strong modern inflation have not as easy an explanation if we consider a shorter run. « The monetary expansion

has a significant impact on inflation (above all in the long term) but other factors, which we could call structural or institutional and which are represented by the autonomous push of wages or employment play a role of similar importance » says economist Miguel Boyer (p. 89, see Bibliography). He has calculated the following equation for the period 1901-1967:

$$\frac{P_t - P_{t-1}}{P_{t-1}} = -0,17 + 0,79 \frac{M_t - M_{t-1}}{M_{t-1}} - 0,23 \frac{Y_t - Y_{t-1}}{Y_{t-1}}$$

(1,0) (5,6) (2,1)

where:

- P = general price level;
- M = banknotes plus bank demand deposits;
- Y = real national income;
- R² = 0.41;
- DW = 1.45.

The figures between parentheses stand for the *t* statistic.

To conclude we must admit that the quantification effort is far from complete and that we ought to have long series of many other variables, and also better studies of institutional factors in order to be able to give a satisfactory explanation going beyond the very crude quantity theory. There seems to be no doubt about the relationship between money and prices. But it is also clear that we do not know which way causation runs. Furthermore, one cannot avoid feeling that behind both variables, lurk other more real and structural elements, such as saving, investment, employment, wages, profits, monopolistic factors in the crucial markets, policy variables and so on.

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