

MONEY SUPPLY IN PORTUGAL 1834-1891 (*)

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Introduction

The estimation of money supply is a necessary step in the task to understanding the links between monetary and real sectors in Portugal in the 19th century. Only after it is done it will be possible, and necessary, to interlink different variables, such as money supply, prices, gross domestic product, foreign trade, etc., and outline short term and long term evolution.

The estimation of MO for the period between 1834 and 1891 presented in section 2 was prepared for a research project about the history of the Lisbon Mint made by a team of the Gabinete de História Económica e Social of the Institute of Economics and Management of the Technical University of Lisbon. The first section deals with an interconnected and, in a certain sense, previous subject: monetary regime. The period under consideration will be 1797-1891. Its beginning coincides with the introduction of paper-money in Portugal and its end with the declaration of inconvertibility after a financial and banking crisis.

Section 3 presents a perfunctory analysis of monetary evolution on the economy. Of course, much more research about these questions is needed. Anyway, I hope this text will be useful as a starting point for this research.

1 — Monetary regime 1797-1891

This section is a description of the main aspects of the evolution of the monetary regime, needed to understand the estimation made in section 2 and to raise some problems about the relations between the monetary evolution and general economic evolution. No references are made to the general political and social evolution of the country. However, it may be useful to present the following main dates:

Until 1807 — absolutist monarchy, with the government in Lisbon (in 1801 short war with Spain);

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- 1807-1814 — absolutist monarchy, with the government in Rio de Janeiro — war with France (with several periods of occupation of parts of the country by French armies);
- 1814-1820 — absolutist monarchy, with the government in Rio de Janeiro.
- 1820-1823 — constitutional monarchy, with the government in Lisbon (independence of Brazil in 1822);
- 1823-1826 — absolutist monarchy;
- 1826-1828 — constitutional monarchy;
- 1828-1834 — civil war between an absolutist government and constitutionalist rebels, that gradually won the country;
- 1834-1851 — constitutional monarchy, with political instability (in 1846-1847 short civil war);
- 1851-1891 (as a matter of fact until the first decade of the 20th century) — constitutional monarchy, with political stability.

Bimetallism

In the beginning of the last decade of the 18th century, the Portuguese monetary regime was bimetallism, a regime that had been introduced in the 15th century. According to the principles of this system, the monetary unit was defined in terms of gold and silver, and the means of payment included gold and silver legal tender coins and copper subsidiary coins.

The monetary unit was, since the 15th century, the real. Its gold definition had been established in 1688 as 2.054 mg of fine gold; its silver definition had been established in 1747 as 28.046 mg of fine silver. The conto was an accounting unit equal to 1 million réis.

Paper-money

The Law of the 13th July 1797 created a new means of payment: paper-money. According to this law, 1200 contos of a public loan should be issued in small bonds, and circulate as money by their nominal value. The financial problems of the government resulted in a much higher issue of nearly 16,514 contos.

The Law of the 31st May 1800 forbade further issues of paper-money, considering the cost of the interest (6%), the inconvenience to trade and circulation, and the rise of prices it implied. However, further issues of nearly 500 contos and of nearly 163 contos were made in 1805 and 1807, respectively. At the same time, interest was reduced to 5 % for some bonds and disappeared for other bonds.

The introduction of paper-money in the Portuguese monetary circulation was completely at variance with the rules of bimetallism, because paper-money was an unconvertible fiduciary means of payment (and it was not a subsidiary one).

At the same time the issued amount represented a significant part of the Portuguese monetary circulation. No precise figure can be provided, but it is possible to argue that something between two fifths and one half is a reasonable guess. As a matter of fact, the amount around 16 thousand contos of paper-money was later replaced by foreign coins that represented 44 % of MO (see table 1).

In this context, two problems arose: paper-money was not accepted by some economic units in certain transactions and it circulated with a discount. It is not possible to determinate the discount in each moment of the existence of paper-money. However, the general evolution was the following: discount was near 20 % when the issue began; rose to 60 % in the time of the wars against France (1807-1814); decreased to 12 % with peace; after some oscilations grew to nearly 22 % in 1820; it oscilated again between 11 % and 14 % between 1821 to 1826; and rose to 30 % in 1827, 75 % in 1833 and 95 % in 1834, because of civil war.

Foreign coins

The first attempt to introduce foreign coins in Portuguese circulation was made during the occupation of the country by a French army (autumn 1807-summer 1808). The Law of the 30th November 1807 gave the status of legal tender to French and Spanish coins. The law included two lists with the values of those coins in the Portuguese monetary unit.

Such an attempt was short lived in what concerns French and Spanish coins, because it was repealed as soon as the occupation ended. However, the French occupation army was replaced by a British liberating army, which also needed to make its payments in its national currency. Thus, a decree of the 14th July 1808 gave the status of legal tender to British gold coins, a situation later confirmed by the Law of the 3rd December 1812.

The Banco de Lisboa

The problems arisen by the existence of paper-money gave way to many plans to extinguish it. However, lack of fresh funds for redemption prevented any action from the Portuguese authorities until 1821.

In October 1821, a proposal was made in the parliament to create a bank which would lend to the government the money needed to redeem paper-money, in exchange of the right to issue convertible bank notes. The government supported such a plan, and there resulted the Law of the 31st December 1822, which created the first Portuguese bank, the Banco de Lisboa. According to the law, it was a bank of lending, deposit and discount, which should fight usury, promote the ease of private transactions, and, of course, help to redeem paper-money.

The foundation of the bank was a partial failure, because only half of the intended capital of 5000 contos was raised. This prevented the public loans needed to redeem paper-money, and the main monetary consequence of the foundation of the first Portuguese bank was only to add bank notes to coins and to paper-money as a component of Portuguese currency.

The 1822 reform of gold money

Meanwhile, the Law of the 6th March 1822 tried «to bring back into circulation gold coins, which for the moment do not flow, because their legal value is much lower than the one they have as a commodity», by means of a revision of the gold definition of the real to 1.753 mg of fine gold, and a recoinage of gold coins.

Foreign coins again

The civil war fought between the absolutist and the liberal parties in the late 1820's and early 1830's brought foreign coins again into Portuguese monetary circulation. As a matter of fact, the liberals had to borrow extensively in Britain to finance their decisive campaigns, and the lack of a proper mint forced them to give legal tender status to British gold coins and to Spanish, Brazilian, and Mexican silver coins, by the Decree of the 20th August 1832. Though, the Decree of the 16th November 1833 repealed such a measure, a new attempt to redeem paper-money with a new British loan in 1834 reestablished British gold coins and Spanish and Mexican silver coins as a normal part of Portuguese means or payment.

The redemption of paper-money

The Decree of the 23rd July 1834 tried to extinguish paper-money, by means of an immediate exchange for coins with a 20 % discount, or for government bonds payable in 1838 at par. In spite of some delays in these payments, paper-money ceased to play any important role in Portuguese monetary life.

The 1835 reform of silver money and the new coins

The Law of the 24th April 1835 revise the silver definition of the real to 27.141 mg of fine silver, and introduced new types of gold and silver coins, according to a decimal basis. As the old coins retained their legal status, there was no general recoinage.

The Banco Comercial do Porto

The Decree of the 13th August 1835 authorised a new issuing bank in Portugal: the Banco Comercial do Porto.

Inconvertibility of the notes of the Banco de Lisboa

The Decree of the 23rd May 1846 suspended for three months the convertibility of the notes of the Banco de Lisboa, and established its circulation at the nominal value. On the 20th August of the same year, a new decree extended this delay until the 1st October, and on the 1st October a third decree extended again the delay until the end of the year. As the law was not respected, because the notes of the Banco de Lisboa were often refused or accepted with a discount, the Decree of the 14th November 1846 established heavy penalties to those who did not accept the notes for their nominal value.

The Banco de Portugal

The Decree of the 19th November 1846 merged the Banco de Lisboa and another corporation, the Companhia Confiança Nacional, in a new bank, the Banco de Portugal, which was awarded the exclusive right to issue convertible bank notes in the country, with the exception of the right already given to the Banco Comercial do Porto. The same decree determined the reduction of the amount of the notes of the Banco de Lisboa in circulation to 5000 contos, and the redemption of 18 contos of these notes every month by the Banco de Portugal. The Decree of the 10th March 1847 increase the monthly redemption to 50 contos.

These measures did not prevent the circulation of the notes of the Banco de Lisboa with discount. Such a situation was legally accepted by the Law of the 13th July 1848, which determined that the notes of the Banco de Lisboa should not exceed $\frac{1}{4}$ of the State payments, and should cease to be forcibly accepted in other transactions. The same law created an additional to several direct and indirect taxes to finance the redemption of these notes. Anyway, the mistrust of bank notes would remain a significant feature of the Portuguese economic life for a long time.

Further foreign coins and the 1846-1851 reform of gold money

The Decree of the 23rd June 1846 gave legal tender status to several foreign coins and called up the value of British sovereigns by 9.2 %. The number of foreign gold and silver coins with legal tender status was much increased by several decrees during the first half of 1847. The Decree of the 3rd March 1847

called up the value of the gold coins of the Law of the 6th March 1822 by 6.6) % (what implied a revision of the gold definition of the real to 1.643 mg of fine gold), and withdrew from circulation the gold coins of the Law of the 24th April 1835.

The Law of the 15th February 1851 introduced new gold coins according to the 1847 definition of the real, and withdrew from circulation all foreign gold coins that had received legal tender status in 1846 and 1847 (not that this retained British gold coins in circulation).

Gold standard

The Law of the 29th July 1854 introduced in Portugal a new monetary regime, according to the rules of classical gold-standard. The gold definition of the real became 1.626 mg of fine gold. New legal tender gold coins and subsidiary silver coins were introduced according to the new general characteristics of the monetary system, and gold and silver coins only retained legal tender status provisionally. Foreign silver coins also lost legal tender status, and the only foreign coins that remained in circulation were British gold coins.

Gold, standard rules functioned quite well until 1891, except for the financial crisis the country faced in 1876. Then, a bank rush forced the government to decide for a two months moratorium which included inconvertibility of bank notes, by a Decree of the 18th August 1876. However, normaly was reestablished within this delay.

New issuing banks

Several new issuing banks were authorised during the third quarter of the 19th century. They were: the Banco Mercantil Portuense (1856), the Banco União do Porto (1861), the Nova Companhia de Utilidade Pública (1861), the Banco Aliança (1863), the Banco do Minho (1864), the Banco Comercial de Braga (1873) and the Banco de Guimarães (1873).

Let us note that all issuing banks had their headquarters in the North of the country, mainly in Oporto, with the exception of the Banco de Portugal, which had its headquarters in Lisbon and a branch in Oporto. As a matter of fact, the notes of the Banco de Portugal were accepted all over the country, but the notes of the other issuing banks only circulated in the Northern region.

The 1882 reform of copper money

The Law of the 31st May 1882 determined a reform in the copper and bronze subsidiary coins that circulated in the country.

Concentration of bank note issuing

The law of the 29th July 1887 gave the Banco de Portugal the monopoly of bank note issuing in the whole country. Negotiations to establish the way the Banco de Portugal would redeem the notes of the other issuing banks dragged until 1891, and only the Decree of the 9th July 1891 established these conditions.

Inconvertibility again

Meanwhile, a two months moratorium on the convertibility of the notes of the Banco de Portugal had been established by the Decree of the 10th May 1891. This 1891 financial crisis proved much more difficult than the 1876 one, and inconvertibility had to be extended sine die by a new Decree of the 9th July 1891. Thus, Portugal abandoned gold-standard for a regime of conventional money, de jure provisionally, but de facto definitively.

2 — Money supply

A quantitative appraisal of money supply in Portugal between 1834 and 1891 must take into account six kinds of means of payment which made up the circulating medium used in the Portuguese economy during these years. These six kinds of means of payment are:

- a) Portuguese gold coins;
- b) Portuguese silver coins;
- c) Portuguese copper and bronze coins;
- d) Foreign gold coins;
- e) Foreign silver coins;
- f) Bank notes.

The result of the estimates is presented in table 1.

Portuguese gold coins

As we noticed above, there was a general recoinage of gold coins in Portugal after the Law of the 6th March 1822. This recoinage attained 4,360 contos in 1822 and 1823. Further issues of these coins attained 458 contos until 1837.

The amount of gold coins issued according to the Law of the 24th April 1835 was only 25 contos.

The 1847 calling up of the gold coins of the Law of the 6th March 1822 and withdrawal from circulation of the gold coins of the Law of the 24th April 1835 raised the nominal amount of gold coins in circulation to 5,139 contos, to

which were added 6 contos of coins of the Law of the 6th March 1822 issued in 1847, and 447 contos of the new coins introduced by the Law of the 15th February 1851 issued between 1851 and 1854.

The Law of the 29th July 1854 retained provisionally in circulation the gold coins of the Law of the 6th March 1822 with their 1847 value and withdrew immediately from circulation the gold coins of the Law of the 15th February 1851. There was no massive recoinage, but new coins must have replaced gradually the old ones, after a first period of recoinage of gold withdrawn from circulation. The amount of new coins attained 7,950 contos until 1891.

According to these facts, I estimated the amount of Portuguese gold coins in circulation as 5 thousand contos between 1834 and 1850, as 6 thousand contos between 1851 and 1853, as 5 thousand contos between 1854 and 1859, 6 thousand contos between 1860 and 1878, and as the accumulated coinage since 1854 between 1879 and 1891.

Portuguese silver coins

As was noticed above, silver coins issued since 1747 retained legal tender status until 1854, and were only gradually replaced thereafter. Accumulated coinage since 1747 attained more than 30 thousand contos, but most of these coins were melted or exported before 1834.

To estimate the amount of Portuguese silver coins in circulation between 1834 and 1854, I supposed it was equal to the amount of old silver coins exchanged for new silver coins after 1854, that is to say 8 thousand contos. Such an amount was retained until the accumulated coinage since 1854 exceeded it, what happened in 1879. The estimate coincides with accumulated coinage since 1854 thereafter.

Portuguese copper and bronze coins

The estimates of Portuguese copper and bronze coins in circulation was made with a technique similar to the one used for Portuguese silver coins, using the exchange of old coins after the 1882 reform as benchmark. This led to a constant 2 thousand contos estimate.

Foreign gold coins

The amount of British gold coins existing in circulation in 1854 was estimated as 5 million pounds (22 thousand contos) according to contemporary estimates. Yearly variations between 1834 and 1891 were estimated on the basis of foreign trade statistics. These statistics were interpolated and extrapolated for the years for which there is no official data.

Between 1846 and 1850, I added an estimate of other foreign gold coins in circulation equal to the amount of the recoinage of such coins made in 1851.

Foreign silver coins

The amount of foreign gold coins existing in circulation in 1853 was estimated as the amount of exports of silver coins between 1854 and 1856, that is to say 4 thousand contos. Yearly variations between 1834 and 1853 were estimated on the basis of foreign trade statistics. These statistics were interpolated and extrapolated for the years for which there is no official data.

I assumed no foreign silver coins remained in circulation after gold-standard was enacted. As a matter of fact, they lost legal tender status, and there was no advantage in exchanging them for the new Portuguese silver coins. It is probable that the big exports of silver coins between 1854 and 1856 was an attempt to exchange these silver coins for gold coins that retained legal tender status.

Bank notes

The amount of bank notes in circulaion was estimated according to the balance sheets of issuing banks.

3 — Money and the economy

Table 2 presents a comparison between money supply and gross domestic product for the period under consideration.

The velocity of circulation of money

Both gross domestic product and money supply show stagnation trends until the mid-1850's, and growing trends thereafter. Their ratio, the velocity of circulation of money, oscilates between 5 and 7, without any significant time trend (see figure 1), or any significant relation to *per capita* real gross domestic product (see figure 2). In the short-term, velocity grows in financial crisis periods and decreases in other periods.

TABLE 1
Money supply

Year	Portu- guese gold coin amount	Perce- tage	Portu- guese silver coin amount	Perce- tage	Portu- guese copper coin amount	Perce- tage	Portu- guese bank notes amount	Perce- tage	Foreign coin amount	Perce- tage	Money supply amount
1834	5	14	8	22	2	6	5	14	16	44	36
1835	5	14	8	22	2	6	5	14	16	44	36
1836	5	14	8	22	2	6	5	14	16	44	36
1837	5	14	8	22	2	6	5	14	16	44	36
1838	5	14	8	22	2	6	5	14	16	44	36
1839	5	14	8	22	2	5	6	16	16	43	37
1840	5	14	8	22	2	5	6	16	16	43	37
1841	5	13	8	21	2	5	7	18	16	43	38
1842	5	13	8	21	2	5	7	18	16	43	38
1843	5	13	8	21	2	5	8	21	16	40	39
1844	5	13	8	21	2	5	8	21	16	40	39
1845	5	13	8	20	2	5	9	22	16	40	40
1846	5	14	8	21	2	5	5	14	17	46	37
1847	5	14	8	22	2	6	4	11	17	47	36
1848	5	14	8	22	2	6	4	11	17	47	36
1849	5	14	8	23	2	6	3	9	17	48	35
1850	5	14	8	23	2	6	3	9	17	48	35
1851	6	16	8	22	2	5	3	8	18	49	37
1852	6	15	8	20	2	5	3	8	21	52	40
1853	6	15	8	19	2	5	2	5	23	56	41
1854	5	13	8	21	2	5	2	5	22	56	39
1855	5	12	8	20	2	5	1	2	25	61	41
1856	5	12	8	19	2	5	2	5	26	60	43
1857	5	11	8	18	2	5	2	5	27	61	44
1858	5	11	8	18	2	4	2	4	29	63	46
1859	5	11	8	17	2	4	2	4	30	64	47
1860	6	12	8	15	2	4	2	4	33	65	51
1861	6	11	8	15	2	4	2	4	35	66	53
1862	6	10	8	14	2	4	3	5	39	67	58
1863	6	10	8	14	2	3	2	3	41	70	59
1864	6	10	8	14	2	3	2	3	41	70	59
1865	6	11	8	14	2	3	3	5	38	67	57
1866	6	10	8	14	2	4	2	4	38	68	56
1867	6	11	8	14	2	4	2	4	37	67	55
1868	6	11	8	15	2	4	2	4	36	66	54
1869	6	11	8	15	2	4	2	4	36	66	54
1870	6	11	8	14	2	4	3	5	37	66	56
1871	6	10	8	13	2	3	3	5	41	69	60
1872	6	10	8	13	2	3	3	5	43	69	62
1873	6	9	8	12	2	3	3	5	47	71	66
1874	6	9	8	12	2	3	4	6	48	70	68
1875	6	9	8	11	2	3	5	7	50	70	71
1876	6	8	8	11	2	3	4	5	53	73	73
1877	6	8	8	11	2	3	5	7	52	71	73
1878	6	8	8	10	2	3	5	7	54	72	75
1879	6	8	9	12	2	2	6	8	53	70	76
1880	6	8	9	11	2	2	6	8	56	71	79
1881	6	7	9	11	2	2	7	9	59	71	83
1882	6	7	9	11	2	3	6	7	59	72	82
1883	6	7	9	11	2	2	6	7	63	73	86
1884	7	8	9	10	2	2	7	8	65	72	90

Year	Portu- guese gold coin amount	Perce- tage	Portu- guese silver coin amount	Perce- tage	Portu- guese copper coin amount	Perce- tage	Portu- guese bank notes amount	Perce- tage	Foreign coin amount	Perce- tage	Money supply amount
1885	7	8	9	9	2	2	7	8	68	73	93
1886	7	7	9	8	2	2	8	8	77	75	103
1887	7	6	10	9	2	2	9	8	82	75	110
1888	7	6	12	10	2	2	11	9	87	73	119
1889	7	6	12	9	2	2	12	9	95	74	128
1890	8	6	13	10	2	2	11	8	99	74	133

Source. — Estimate as explained in section 2 of the text.

Unit. — Thousands of *contos*.

Reference date. — Last day of the year.

TABLE 2
Velocity of circulation of money

Year	Money supply (10 ³ <i>contos</i>)	Gross domestic product (10 ³ <i>contos</i>)	Velocity of circulation of money	<i>Per capita</i> real gross domestic product (10 ³ <i>réis</i>)
1834	36	232	6.4	104
1835	36	232	6.4	85
1836	36	222	6.2	88
1837	36	217	6.0	106
1838	36	203	5.6	98
1839	37	201	5.4	93
1840	37	206	5.6	86
1841	38	215	5.7	86
1842	38	228	6.0	101
1843	39	234	6.0	109
1844	39	229	5.9	124
1845	40	226	5.7	122
1846	37	226	6.1	99
1847	36	227	6.3	103
1848	36	227	6.3	114
1849	35	225	6.4	107
1850	35	224	6.4	95
1851	37	225	6.1	102
1852	40	237	5.9	109
1853	41	234	5.7	89
1854	39	234	6.0	75
1855	41	248	6.0	82
1856	43	261	6.1	71
1857	44	278	6.3	87
1858	46	289	6.3	97
1859	47	283	6.0	86
1860	51	282	5.5	88
1861	53	301	5.7	88
1862	58	325	5.6	93
1863	59	333	5.6	98
1864	59	348	5.9	100
1865	57	353	6.2	103
1866	56	344	6.1	97
1867	55	360	6.5	95
1868	54	366	6.8	102

Year	Money supply (10 ³ contos)	Gross domestic product (10 ³ contos)	Velocity of circulation of money	Per capita real gross domestic product (10 ³ réis)
1869	54	380	7.0	107
1870	56	392	7.0	115
1871	60	385	6.4	115
1872	62	407	6.6	121
1873	66	433	6.6	123
1874	68	462	6.8	126
1875	71	492	6.9	133
1876	73	501	6.9	133
1877	73	509	7.0	120
1878	75	505	6.7	120
1879	76	492	6.5	121
1880	79	502	6.4	129
1881	83	524	6.3	131
1882	82	535	6.5	131
1883	86	532	6.2	135
1884	90	557	6.2	149
1885	93	578	6.2	158
1886	103	608	5.9	162
1887	110	623	5.7	167
1888	119	662	5.6	176
1889	128	681	5.3	168
1890	133	679	5.1	151

Sources:

Money supply — Table 1.

Gross domestic product and *per capita* real gross domestic product — NUNES, Ana Bela, MATA, Eugénia and VALÉRIO, Nuno, «Portuguese economic growth 1833–1985», in *The Journal of European Economic History*, vol. 18, no. 2, fall 1989.

Velocity of circulation of money — computed from other data.

FIGURE 1

Evolution of the velocity of circulation of money

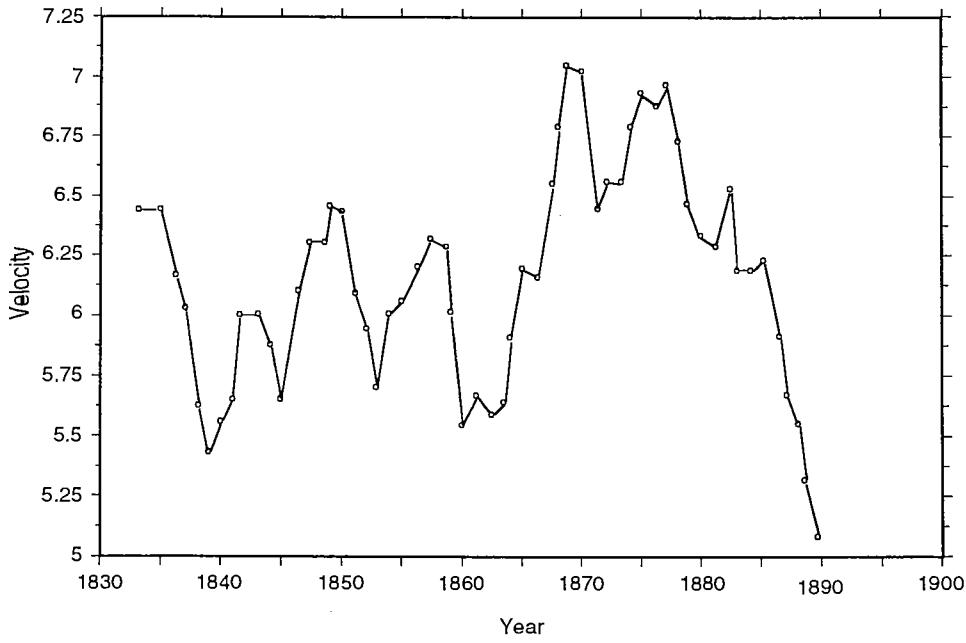
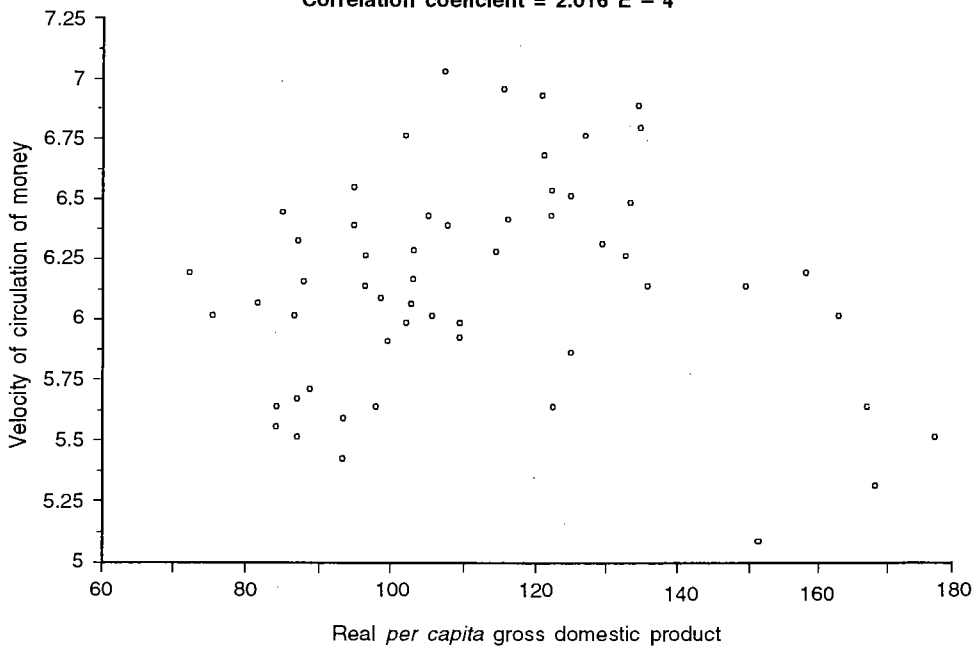


FIGURE 2

Correlation coefficient = $2.016 \text{ E} - 4$



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