Some Observations on the Causes and Consequences of the Shortage of Change in Northeast Brazil
Author(s): Herman E. Daly
Reviewed work(s):
Published by: The University of Chicago Press
Stable URL: http://www.jstor.org/stable/1829638
Accessed: 08/05/2012 18:41

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.
All visitors to the Brazilian Northeast and to other remote parts of the country are struck by the lack of change (small denominations equivalent to about forty cents or less in U.S. dollars) in circulation. Small transactions, such as shoeshines, taxi and bus rides, newspapers, magazines, haircuts, five-and-dime commodities sold by street vendors, and so forth, upon which a large part of the population depends for a significant portion of its livelihood, are made unnecessarily difficult and time-consuming. Occasionally, desired transactions are simply abandoned when the time and nuisance cost of arranging to make change becomes too great. Drugstores often give change in aspirins, and cinemas make change with candy or chewing gum. Since the vast majority of the population is poor, the proportion of small transactions in the total number of transactions is very large, and consequently the demand for small change is large. Also the store-of-value demand, though minimal because of inflation and general poverty, nevertheless tends, for the same reasons, to take the form of demand for small denominations. Furthermore, checks are not widely used, so that odd amounts are not transferred, and largely cancelled out by bookkeeping operations, but actually require cash change. In addition, tipping and almsgiving are very important social customs and require small change.

It is clear, therefore, that the demand for change is large, but what restricts supply? The clew is given by those casual empiricists who note that small bills are always dirty, ragged, torn, and often taped together, while large denominations are generally crisp and new. Metal coins lost their value through inflation long ago, and the smaller denominations of paper money have since functioned as change. The higher velocity of circulation of "fractional money" results in the rapid physical disintegration of paper change. At some point a bill becomes so mutilated that it will no longer be accepted and thus ceases to be money. Borderline cases lead to differences of opinion and friction between buyer and seller. A high
frequency of irksome borderline cases is assured by Gresham’s Law.\(^1\) The
denominational proportions of the currency were never corrected for this
more rapid wearing out, and the result has been a persistent shortage of
change in remote areas. In the metropolitan centers, old ragged bills are
removed from circulation and replaced with new bills as they pass through
government banks—hence no shortage develops. I have been told that an
additional reason for the shortage is that, when the government bank does
send new bills to remote areas, it usually sends large denominations in
order to reduce the bulk of shipment and economize on transport costs.

The solution to the shortage is obviously either to reintroduce metallic or
plastic coins or to increase the supply of paper change sufficiently to
compensate for its more rapid wearing out. The cost would be very small.
The benefits in terms of increased GNP would probably not be staggering,\(^2\)
but in terms of utility I think it is possible that the annual benefits of this
simple measure would exceed those of new foreign aid in any given year!
The reasons are very simple. The benefits of more change accrue to every-
one and especially to the poor majority, who will now sell more newspapers,
shoeshines, and receive more tips, and more especially to the beggars,
who will receive more alms. The most common excuse for putting off a
beggar is “sorry, no change,” and it is usually true. The marginal utility
of money to the poor is extremely high, and the increments in their
incomes would be immediate. Foreign aid, by contrast, has a marked
tendency to benefit wealthy politicians and oligarchs, whose marginal
utility of income is very low and who comprise a small minority of the
population. Also, whatever benefits do trickle down to the poor take a
long time, and, when discounted to their present value at high interest
rates, become smaller still. It is hardly necessary to add that, although some
thousands of dollars invested in currency correction might do more real
good than the millions spent in aid, neither aid nor currency correction
will constitute more than a drop in the bucket of the effort necessary to
raise the level of living of the lower 90 percent of the population.\(^3\)

Granted that it would be an easy matter for the government to correct
the shortage and that the benefits are greater than the costs, one might
yet ask why the profit motive has not led someone to correct this scarcity.\(^4\)

---

\(^1\) Also, the fact that everyone knows that change is scarce leads them to hoard it
for occasions when they really need it. Thus, an individual will often attempt to
pay with a large bill even though he has the correct change in his pocket and will
sometimes forgo a marginal transaction rather than deplete his reserves of change.

\(^2\) As a first approximation, the increment in GNP could be calculated by multiply-
ing the (high) income velocity of circulation of small denominations by the (small)
increment to the money supply in the form of small denominations.

\(^3\) The larger developmental issues of the region are considered in my paper, The Pop-
ulation Question in Northeast Brazil: Its Economic and Ideological Dimensions,” forth-
coming in *Economic Development and Cultural Change*.

\(^4\) I am grateful to the editor for raising this question.
Specifically, why does not someone set up a business of making tokens and stand ready to buy them back at a fixed cruzeiro selling price which is higher than the cost of production? Would not the tokens then circulate as change and at the same time avoid counterfeit laws? Why would this not be privately profitable? The answer is, in part, that our private entrepreneur would be attempting to supply an indivisible social benefit (plentiful and durable change) but not a divisible private benefit. One can conceive of such a business as an already going concern, but starting from scratch it would not likely become a going concern. Why should any individual *Homo economicus* purchase tokens whose commodity value is less than the value of the money note he exchanged for them? The mere promise of reversibility of the transaction would not suffice to make it beneficial to the single individual acting independently. But suppose that a well-established, widely used enterprise, such as the bus company, were to issue tokens having the value of one bus ride. There is now a definite likelihood that these tokens would begin to function as change, since individuals would, from the beginning, have a reason to buy them and carry them around. The average token balances held by the “non–bus company public” would represent free credit extended by the public to the bus company equal in amount to the difference between the monetary value of the tokens and their commodity cost of production. In “compensation,” the public receives the social benefit of more change. The situation is analogous to the international gold-exchange standard, where credit is extended to the key-currency countries by other countries who hold their reserves in the form of key currencies. Perhaps the bus company is missing a good bet by not issuing tokens, but who can be sure that the tokens would really become an accepted medium of exchange? And who can be sure that the government will not soon correct the shortage, leaving the bus company with an excess inventory of tokens? Furthermore, just to see this possibility of gain requires a fairly sophisticated understanding of money.5

Pressing the analogy to international exchange a bit further, one could ask why a flexible rate has not developed between denominations? If, because of scarcity, 100 centavos are preferred to one cruzeiro, why

5 However, a private bank in São Paulo did turn a profit by supplying change in a similar circumstance. After a currency revaluation, it turned out that the smallest unit was one cruzeiro, while the price of two important commodities, the *cafezinho* and a bus ride, were still fixed at one-half of one cruzeiro, or fifty centavos—the centavo existing as an accounting unit only, not as a medium of exchange. The private bank issued miniature paper checks payable to the bearer on demand in the amount of fifty centavos and sold them two for a cruzeiro. These checks were accepted and circulated as change for a period, until the anomaly was corrected. Of course, most of the checks were never presented for redemption, since (two were required) the monetary value was not worth the transactions cost to most people, and some paper checks were too mutilated. The bank is reported to have made a nice profit. (I am grateful to Professor Dennis Cintra-Leite of the University of São Paulo Business School for telling me of this incident.)
does the exchange rate between cruzeiros and centavos remain fixed at 100 to one? No law forbids voluntary exchange at other than the fixed denominational equivalents. But to the extent that small denominations appreciate in value relative to larger denominations, they *ipso facto* cease to be change! Furthermore, I doubt that anyone would be able to sell change at a premium, since among the many feudal aspects of the economy of the Brazilian Northeast is a strong and healthy residue of just-price philosophy; and who can deny that the just price of 100 centavos is exactly one cruzeiro?

*Herman E. Daly*

*Yale University*

*and*

*Louisiana State University*

*The author was visiting professor of economics at the University of Ceará, Brazil, during 1967–68.*