

# The multiplier effect of a Fomento project in comparison with a similar project in national currency

## 1. Introduction

The main hypothesis of this project is that the realization of a social community project through the Fomento method, results in higher economic benefits for the local economy than the conventional realization using the national currency. The argumentation is that the use of local currency avoids excessive leaking of purchasing power to the “world market” (non-local economy). Local currency is supposed to circulate faster and longer (i.e. changing more hands) in a local economy than its national equivalent.

In order to check the validity of this thesis, Jeová Torres of the University of Bahia, at the request of Strohalm, investigated the circulation of both *Palmas* and Reais in Conjunto Palmeira. The field research has obtained the following data about the expenditure pattern of the interviewed persons:

- Expenditure of Reais:
  - Locally with individual persons
  - Locally with enterprises
  - Externally (non-local)
- Expenditure of *Palmas*
  - Locally with individual persons
  - Locally with enterprises
  - Repayment of loans (thus extracting the *Palmas* from circulation).

The interviews have been held with recipients of *Palmas* and Reais in the project, and with a similar project in the same neighborhood that was paid for with Reais. It was expected that a category “Repayment of loans” would be found; however, none of the interviewed persons had any expenditure on this item. This means that none of the interviewed persons had a Fomento loan (that could be repaid in *Palmas*) with Banco *Palmas*. It is therefore possible that the calculated multiplier is higher than the multiplier actually obtained.

It is important to mention that the income (or “multiplier”) effect is *only part of the total additional effect* of the Fomento project. Another additional effect is the *increase in the production capacity* of the enterprises that have received microcredits. This increased production capacity can generate more income and employment that would not have been generated if the social project (construction of the Palmatech School) had been realized using conventional money.

In order to make a useful comparison, the Fomento project was compared with a similar project in which only national currency was used. For analytical purposes,

the percentage of the total cost that was spent on labor and material was fixed in both projects at the same rate: 56% materials and 44% labor.

**1. Local income effect of a 100% Reais (R\$) impulse**

In this section, the local income or multiplier effect will be calculated of an impulse of 100 Reais. This is the conventional way of realizing a social project and will be used as a reference to compare the results of a similar impulse according to the Fomento method.

The investigation of Torres obtained the following parameters regarding the spending behavior of businesses and individual persons that have received income during the implementation of a conventional project:

Businesses:

- 23 % is spent locally with persons (LP = 0,23)
- 25 % is spent locally with businesses (LB = 0,25)
- 52 % is spent externally (E = 0,52)

Persons:

- 24 % is spent locally with persons (LP = 0,24)
- 27 % is spent locally with businesses (LB = 0,25)
- 51 % is spent externally (E = 0,51)

The income effect of an impulse of 100 Reais, of which 56 % is spent with businesses (construction materials) and 44 % with persons (labor), during 10 rounds, can be calculated in the following way:

After 10 rounds, the income effect of<sup>1</sup>:

• the 56 R\$ that are spent with enterprises, is:	110,46
• the 44 R\$ that are spent with persons, is:	99,06
Total income effect	209,52

The multiplier of a conventional project, using 100% Reais, is therefore almost 2,10. For the exact calculation, please see the attached spreadsheet.

**3. Local income effect of a mixed Reais (R\$) and Palmas (P\$) impulse (Fomento project)**

For analytical purposes the initial impulse in the Fomento project is also calculated to a value of 100 (just like in the previous 100% Reais calculation) and the

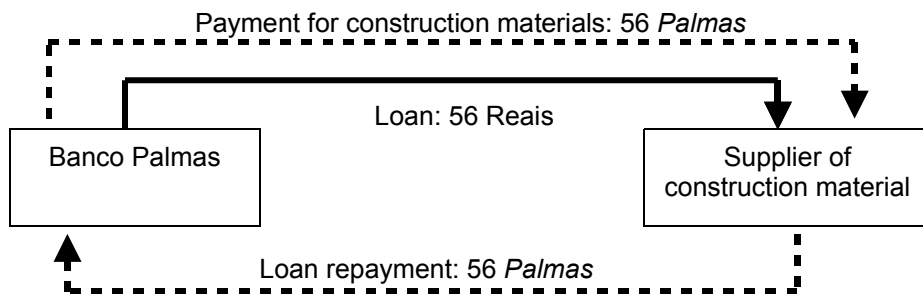
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<sup>1</sup> For the calculations see spreadsheet attached.

proportion of spending between businesses and individuals (workers) remains unchanged (56% against 44%). The differences with the 100% Reais impulse are:  
 (a) The expenditure to businesses is 56 P\$ which are spent on building materials;  
 (b) The laborers received a mixed payment of 35 P\$ and 9 R\$ (80%-20%).

**Ad (a) Business expenditure**

As described in the Implementation Report (1.4.1, table 6), the suppliers of the construction material accepted 100% *Palmas*, but received on the other hand a loan in Reais that was canceled amount exclusively with the *Palmas* received. This resulted in a very short *Palma* cycle from lender (Banco *palmas*) to borrower (business) and back. Graphically, this cycle can be depicted in the following way:



Since the *Palmas* have not circulated in the community, an additional multiplier effect cannot be expected. The *Palma* payment of the suppliers had a purely educational purpose. Therefore, the *Palma* payment of the suppliers will be treated as if it were a payment in Reais.

**Ad (b) The expenditure of individual persons**

For a Fomento project the calculation of the income effect is more complicated, because labor has been paid partially in Reais and partially in *Palmas*. For the Reais paid to the workers in the Fomento project other parameters apply than in the conventional project: a larger part of the Reais income is spent outside the community. This is logical, since the workers still want to buy certain products outside the community with less Reais available.

Since part of the Reais expenditure of individuals is spent with businesses, there is also a (small) effect after round 1 through business that have received Reais from individuals. For the calculation of this effect the same parameters as in the 100% Reais impulse have been used.

The parameters used in the calculation of the multiplier effect of the Fomento project are:

For businesses that have received Palmas<sup>2</sup> (56 Palmas):

<sup>2</sup> These are the same parameters as for a Reais payment. The reason for this equivalence has been explained in the previous paragraph.

23 % is spent locally with persons (LP = 0,23)  
 25 % is spent locally with businesses (LB = 0,25)  
 52 % is spent externally (E = 0,52)

For persons that have received Palmas (35 Palmas):

24 % is spent locally with persons (LP = 0,24)  
 76 % is spent locally with businesses (LB = 0,76)  
 0 % is spent externally (E = 0)

For persons that have received Reais (9 Reais):

18 % is spent locally with persons (LP = 0,18)  
 15 % is spent locally with businesses (LB = 0,15)  
 67 % is spent externally (E = 0,67)

After 10 rounds, the income effect of<sup>3</sup>:

• the 56 P\$ that are spent with enterprises, is:	110,46
• the 35 P\$ that are spent with persons, is:	104,65
• the 9 R\$ that are spent with persons, is:	13,95
<b>Total income effect</b>	<b>229,06</b>

The multiplier of the Fomento project is therefore roughly 2,29.

#### 4. Comparison between a conventional and a Fomento project

Comparison of the two local multipliers (2,10 for the conventional project and 2,62 for the Fomento) learns that the income effect of the latter method resulted is almost 25% higher (24,7). If one abstracts from the 46% business expenditures (which are identical for the conventional and the Fomento project), the difference between the two methods is almost 20%. In other words, in the hypothetical case that the project would have been realized with 100% *Palmas*, the income effect would be 20% higher than in a conventional project.

Receiver of initial impulse	Initial amount spent by project		Multiplier effect (after 10 rounds)		Difference
	Conventional project	Fomento project	Conventional project	Fomento project	
Businesses	56 Reais	56 Palmas	110,46	110,46	0%
Individuals	44 Reais	35 Palmas 9 Reais	99,06	104,65 13,95	
Sub total individuals	44	44	99,06	118,60	+19,7%
<b>Total</b>	<b>100 Reais</b>	<b>91 Palmas + 9 Reais</b>	<b>209,52</b>	<b>229,06</b>	<b>+9,3%</b>

<sup>3</sup> For the calculations see spreadsheet attached.

This difference in income effect is significant considering the relatively small size and the short duration of the project. Moreover, the difference could have been considerably higher if the business involved would have been more integrated into the local economy (see conclusions of the Assessment Report).

**Finally, it has to be mentioned that the above analysis only measures the additional income effect of the expenditure of the social project through a Fomento. The economic effect of the additional loans that have become available thanks to the Fomento project has not been taken into account. This effect can be expected to be the same as the increase in production capacity and income generation that results from microcredit programs in general.**

## A. Impulse of 100 in Reais

	Rounds										
	0	1	2	3	4	5	6	7	8	9	10
<b>A.1 Reais expenditure enterprises</b>											
LP (pers.)	0,23	12,88	6,70	3,31	1,64	0,81	0,40	0,20	0,10	0,05	0,02
LB (bus.)	0,25	14,00	7,28	3,60	1,78	0,88	0,43	0,21	0,11	0,05	0,03
E (Ext.)	0,52	29,12	15,14	7,48	3,70	1,83	0,90	0,45	0,22	0,11	0,05
<i>Sub-total A.1</i>											
Local income effect per round	56	26,88	13,98	6,91	3,41	1,69	0,83	0,41	0,20	0,10	0,05
Accumulated local income effect		82,88	96,86	103,76	107,18	108,86	109,70	110,11	110,31	110,41	110,46
<b>A.2 Reais expenditure indiv. persons</b>											
LP (pers.)	0,24	13,44	6,32	3,12	1,54	0,76	0,38	0,19	0,09	0,05	0,02
LB (bus.)	0,27	15,12	7,11	3,51	1,74	0,86	0,42	0,21	0,10	0,05	0,03
E (Ext.)	0,51	28,56	13,42	6,64	3,28	1,62	0,80	0,40	0,20	0,10	0,05
<i>Sub-total A.2</i>											
Local income effect per round	44	28,56	13,42	6,64	3,28	1,62	0,80	0,40	0,20	0,10	0,05
Accumulated local income effect		72,56	85,98	92,62	95,90	97,52	98,32	98,72	98,92	99,01	99,06
<b>Total accumulated income effect</b>	<b>100</b>	<b>155,44</b>	<b>182,84</b>	<b>196,38</b>	<b>203,08</b>	<b>206,39</b>	<b>208,02</b>	<b>208,83</b>	<b>209,23</b>	<b>209,43</b>	<b>209,52</b>

## B. Impuls of 91 Palmas and 9 reais

		Rounds									
	0	1	2	3	4	5	6	7	8	9	10
<b>B.1 Palma expenditure enterprises</b>											
LP (pers.)	0,23	12,88	6,70	3,31	1,64	0,81	0,40	0,20	0,10	0,05	0,02
LB (bus.)	0,25	14,00	7,28	3,60	1,78	0,88	0,43	0,21	0,11	0,05	0,03
E (Ext.)	0,52	29,12	15,14	7,48	3,70	1,83	0,90	0,45	0,22	0,11	0,05
<i>Sub-total B.1</i>											
Local income effect per round	<b>56</b>	26,88	13,98	6,91	3,41	1,69	0,83	0,41	0,20	0,10	0,05
Accumulated local income effect		82,88	96,86	103,76	107,18	108,86	109,70	110,11	110,31	110,41	110,46
<b>B.2 Palma expenditure indiv.</b>											
LP (pers.)	0,24	6,45	4,64	2,72	1,45	0,74	0,37	0,19	0,09	0,05	0,02
LB (bus.)	0,76	20,43	14,69	8,62	4,58	2,34	1,18	0,59	0,29	0,14	0,07
E (Ext.)	0	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
<i>Sub-total B.2</i>											
Local income effect per round	<b>35</b>	26,88	19,33	11,34	6,03	3,08	1,55	0,77	0,38	0,19	0,09
Accumulated local income effect		61,88	81,21	92,55	98,58	101,66	103,21	103,98	104,36	104,55	104,65
<b>B.3 Reais expenditure enterprises</b>											
LP (pers.)	0,23	0,00	0,31	0,13	0,05	0,02	0,01	0,00	0,00	0,00	0,00
LB (bus.)	0,25	0,00	0,34	0,15	0,06	0,02	0,01	0,00	0,00	0,00	0,00
E (Ext.)	0,52	0,00	0,70	0,30	0,12	0,05	0,02	0,01	0,00	0,00	0,00
Local income effect per round	<b>0</b>	0,00	0,65	0,28	0,11	0,05	0,02	0,01	0,00	0,00	0,00
<b>B.4 Reais expenditure indiv. persons</b>											
LP (pers.)	0,18	1,62	0,29	0,11	0,04	0,02	0,01	0,00	0,00	0,00	0,00
LB (bus.)	0,15	1,35	0,24	0,09	0,04	0,01	0,01	0,00	0,00	0,00	0,00
E (Ext.)	0,67	6,03	1,09	0,40	0,16	0,07	0,03	0,01	0,00	0,00	0,00
Local income effect per round	<b>9</b>	2,97	0,53	0,20	0,08	0,03	0,01	0,01	0,00	0,00	0,00

<i>Sub-total B.3 + B.4</i>											
Local income effect per round	9	2,97	1,18	0,48	0,19	0,08	0,03	0,01	0,01	0,00	0,00
Accumulated local income effect		11,97	13,15	13,63	13,82	13,90	13,93	13,94	13,95	13,95	13,95
<b>Total accumulated income effect (B1 + B2 + B3 + B4)</b>	<b>100</b>	<b>156,73</b>	<b>191,22</b>	<b>209,94</b>	<b>219,58</b>	<b>224,42</b>	<b>226,84</b>	<b>228,03</b>	<b>228,62</b>	<b>228,92</b>	<b>229,06</b>