International Journal of Economics, Business and Management Research

Vol. 9, No.03; 2025

ISSN: 2456-7760

A Tedesco Systems of Amortization: The Case of Simple Interest

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doi.org/10.51505/IJEBMR.2025.9301 URL: https://doi.org/10.51505/IJEBMR.2025.9301

Received: Feb 07, 2025 Accepted: Feb 18, 2025 Online Published: Mar 07, 2025

Abstract
The Tedesco system of debt amortization have been discussed both in the Italian specialized literature, and in Brazil, where has been called German Method, assuming compound capitalization. Both approaches are characterized by the payment of interest at the beginning of the period, and constant installments. However, they have different ways of determining interest, amortization and installment.

Recently, the German method has been developed in Brazil, for simple interest capitalization. We develop, in this article, the Tedesco Method for simple capitalization and compare it to the German Method to determine which of them is a better option for the financial institution providing the loan.

Keywords: German amortization method; Tedesco amortization method; simple interest

1. Introduction

Although not very popular neither in Brazil nor in Italy, the German and Tedesco methods of debt amortization have been discussed both in the Brazilian literature, as well in the Italian literature. Both are characterized by charging interest at the beginning of each period. Instead of at the end of the period, like the constant instalments and constant amortization methods.

In Brazil, for instance, the so-called German Method of Amortization have been studied in Moraes (1967), in Juer (2003) and de Faro & Lachtermacher (2012). While in Italy, where is known as “L’Ammortamento Tedesco”, is discussed in Palestini (2017), in class-notes presented in the Sapienza Università di Roma, using the compound interest capitalization.

Given that the comparison of the German and Tedesco methods using compound interest capitalization has been already addressed in de Faro and Lachtermacher (2024a) and the German method itself was explained in de Faro and Lachtermacher (2024b) and in Lachtermacher & de Faro (2024) using compound and simple capitalization, this paper will focus on the development of the Tedesco Method for simple interest capitalization, not yet developed in Italy, and compare it to the German Method using the same type of interest capitalization.

With this purpose, consider the case where a loan in the amount of F units of capital must be amortized by n + 1 periodic payments, with the k^{th} one identified as P_k, for k=0,1,…,n; where n designates the term of the loan. Preliminarily, if the periodic rate of interest, denoted as i, is of simple interest, it is necessary to specify what is called a focal date; cf. Ayres (1963).

Since, for instance, considering the two most usual focal dates, the first being the beginning of the term, epoch 0, and the second being the end of the term, epoch n, the financial equivalence between the loan F and the sequence of the periodic payments, would imply that, respectively:

1) focal date at epoch 0

$$F = \sum_{k=0}^{n} \frac{P_k}{1+i\times k} \tag{1}$$

2) focal date at epoch n

$$F\times(1+i\times n) = \sum_{k=0}^{n} P_k \times \{1+i\times(n-k)\} \tag{2}$$

which implies that we will have different results from equations (1) and (2), whenever n>1. In what follows, we will focus attention on these two mentioned focal dates.

2. The Tedesco Method

Since the Tedesco Method was originally developed considering compound interest capitalization, consider a loan of F units of capital, at the periodic rate i of compound interest, with a term of n periods. As was considered in de Faro Lachtermacher (2024).

According to Palestini (2017), the so called "l'ammortamento Tedesco", implies an initial payment, at the very date of the issuance of the contract, denoted as P_0; such that:

$$P_0 = F\times i/(1+i) \tag{3}$$

with the n remaining payments $P_k,\ k=1,2,\dots,n,$ assumed to be constant and equal to P, such that:

$$F = P\times \ddot{a}_{\overline{n}|i} \Rightarrow F = P\times(1+i)\,a_{\overline{n}|i} \Rightarrow P = \frac{F}{(1+i)\,a_{\overline{n}|i}} = \frac{F}{\ddot{a}_{\overline{n}|i}} \tag{4}$$

where, according to the international notation in Mathematical of Finance, as in de Finetti (1969), Kosiol (1973), and McCutcheon and Scott (1986), we have:

$$\begin{aligned} a_{\overline{n}|i} &= \frac{(1+i)^n-1}{i\cdot(1+i)^n} = \frac{1-(1+i)^{-n}}{i} = \sum_{k=1}^{n}\frac{1}{(1+i)^k} \\ \ddot{a}_{\overline{n}|i} &= (1+i)\,a_{\overline{n}|i} = (1+i)\times\sum_{k=1}^{n}\frac{1}{(1+i)^k} = \sum_{k=1}^{n}\frac{1+i}{(1+i)^k} \end{aligned} \tag{5}$$

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That is, considering the full amount F of the loan, we will have:

$$P = \frac{F \times i}{(1+i) \times \left[1-(1+i)^{-n}\right]} = \frac{F}{(1+i) \times \sum_{k=1}^{n} \frac{1}{(1+i)^k}} \tag{6}$$

However, it should be stressed that the first of these constant payments is supposed to occur at the beginning of the second period (or end of the first period). Furthermore, according to Palestini (2017), we also have the recursion:

$$S_k = (S_{k-1} - P_k) \times (1+i), \; k = 1, 2, \ldots, n \tag{7}$$

where S_k is the outstanding debt at time k, with $S_0 = F$, $S_n = 0$ and

$$P_k = \begin{cases} P \times \left[1-(1+i)^{-1}\right] = F \times i / (1+i), \text{ if } \; k = 0 \\ P, \text{ if } \; k = 1, 2, \ldots, n \end{cases} \tag{8}$$

Additionally, it was also established that the k^{th} parcel of amortization is:

$$A_k = \frac{P}{(1+i)^{n-k}}, \quad \text{for } \; k = 1, 2, \ldots, n \tag{9}$$

with $A_0 = 0$. It should be observed that the sequence of parcels of amortization follows a geometric progression with ratio 1 + i. The k^{th} parcel of interest, denoted as I_k, is:

$$I_k = P_k - A_k = P \times \left[1-(1+i)^{k-n}\right], \quad \text{for } \; k = 0, 1, \ldots, n \tag{10}$$

Considering, as a numerical example, the case of a loan, F, of 100,000 units of capital, at the compound interest rate, i, of 1% per period, and a term, n, of 12 periods, Table 1 presents the corresponding evolution of the debt, using the Tedesco Method as described in Palestini (2017).

Table 1. Evolution of the Debt – Tedesco Method – Compound Capitalization

Epoch (k)	I_k	A_k	P_k	S_k
0	990.10	0.00	990.10	100,000,00
1	912.03	7,884.88	8,796.91	92,115,12
2	833.18	7,963.73	8,796.91	84,151,39
3	753.54	8,043.36	8,796.91	76,108.03
4	673.11	8,123.80	8,796.91	67,984.23
5	591.87	8,205.04	8,796.91	59,779.19
6	509.82	8,287.09	8,796.91	51,492.11
7	426.95	8,369.96	8,796.91	43,122.15
8	343.25	8,453.66	8,796.91	34,668.49
9	258.72	8,538.19	8,796.91	26,130.30
10	173.33	8,623.58	8,796.91	17,506.72
11	87.10	8,709.81	8,796.91	8,796.91
12	0.00	8,796.91	8,796.91	0.00
$\sum$	6,553.02	100,000.00	106,553.02	

2.1 Tedesco Method – Simple Interest Capitalization

Preliminary, it should be noted that the use of simple interest capitalization has been proposed, in Italy, in seminal papers in Mari and Aretusi (2018 and 2019), considering the focal date at epoch 0, and by Annibali et al. (2020), considering the focal date at epoch *n*, both focusing on the case of constant instalments, which, in the Italian literature, is known as "ammortamento alla francese" (french method). Additionally, also considering simple interest, the so called "ammortamento italiano", or method of constant amortization, was addressed in Marcelli (2019). However, as previously pointed out, the present paper appears to be the first one, using simple interest, to consider the "Tedesco method".

Considering the two focal dates under scrutiny, we will have:
1) focal date at epoch 0
Considering a direct extension of Palestini (2017), we will have the following equivalence:

$$F = P^0 \times \left(1 - \frac{1}{1 + i \times n}\right) + P^0 \times a^s_{\overline{n}|i} \qquad (11)$$

where P^0 identifies the constant instalments, and

$$a^s_{\overline{n}|i} = \sum_{k=1}^{n} \frac{1}{(1 + i \times k)} \qquad (12)$$

2) focal date at epoch *n*
Similarly, considering a direct extension of Palestini (2017), we have the following equivalence:

$$F\times(1+i\times n)=P^n\times(1+i\times n)\times\left(1-\frac{1}{1+i\times n}\right)+P^n\times s_{\overline{n}|i}^{s} \tag{13}$$

where P^n identifies the correspondent constant instalments, and

$$s_{\overline{n}|i}^{s}=\left(1+i\times(n-1)\right)+\left(1+i\times(n-2)\right)+\ldots+\left(1+i\times(n-n)\right)$$

or

$$s_{\overline{n}|i}^{s}=n+i\times(n-1+n-2+\ldots+n-n-1+n-n)$$

or

$$s_{\overline{n}|i}^{s}=n+i\times\left(\frac{n\times(n-1)}{2}\right) \tag{14}$$

It should be noted that the first part of the right-hand side of equations (11) and (13) represent, in each case, the interest paid at epoch 0. The difference between them is just the terms that vary with the focal date. Observe that, since the interest at epoch *n* should be zero, the instalment at epoch *n* should be equal to the amortization at epoch *n*; in both cases.

Based in equations (11) and (13), the constant instalments are respectively given by:
1) focal date at epoch 0

$$P^0=\frac{F}{\left[\frac{i\times n}{1+i\times n}+\sum_{k=1}^{n}\frac{1}{(1+i\times k)}\right]} \tag{15}$$

2) focal date at epoch *n*

$$P^n=\frac{F\times(1+i\times n)}{\left[i\times n+n+i\times\left(\frac{n\times(n-1)}{2}\right)\right]} \tag{16}$$

The amortization term at epoch *k* is given by:
1) focal date at epoch 0, $A_0^0=0$ with:

$$A_k^0=\frac{P^0}{\left(1+i\times(n-k)\right)},\ k=1,2,\ldots,n \tag{17}$$

2) focal date at epoch *n* $A_0^n=0$, with:

$$A_k^n=P^n\times\left(\frac{1+i\times k}{1+i\times n}\right) \tag{18}$$

And finally, the interest term at epoch *k* is given by:
1) focal date at epoch 0, $I_0^0=P_0^0$

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$$I_k^0 = P^0 \times \left[1 - \frac{1}{\left(1 + i \times (n-k)\right)}\right] \quad ,k = 0,1,2,\ldots,n \qquad (19)$$

2) focal date at epoch n, $I_0^n = P_0^n$

$$I_k^n = P^n \times \left[1 - \frac{1 + i \times k}{\left(1 + i \times n\right)}\right] \quad ,k = 0,1,2,\ldots,n \qquad (20)$$

It should be stressed that, assuming simple interest, we are making a direct extension of Palestini (2017).

Considering a numerical example of a loan, *F*, of 100,000 units of capital, simple interest rate, *i*, of 1% per period, and a term, *n*, of 12 periods, Tables 2 and 3 present the corresponding evolution of the debt, when extending to simple interest the Tedesco Method based on Palestini (2017), as presented in this section, for both focal dates.

Table 2 – Evolution of the Debt – Tedesco Method – Simple Capitalization – Epoch 0

Epoch (*k*)	I_k^0	A_k^0	P_k^0	S_k^0
0	940.95	0.00	940.95	100,000.00
1	870.31	7,911.93	8,782.25	92,088.07
2	798.39	7,983.86	8,782.25	84,104.21
3	725.14	8,057.11	8,782.25	76,047.10
4	650.54	8,131.71	8,782.25	67,915.39
5	574.54	8,207.71	8,782.25	59,707.68
6	497.11	8,285.14	8,782.25	51,422.55
7	418.20	8,364.04	8,782.25	43,058.50
8	337.78	8,444.47	8,782.25	34,614.04
9	255.79	8,526.45	8,782.25	26,087.58
10	172.20	8,610.05	8,782.25	17,477.54
11	86.95	8,695.29	8,782.25	8,782.25
12	0.00	8,782.25	8,782.25	0.00
∑	6,327.91	100,000.00	106,327.91	

Table 3 – Evolution of the Debt – Tedesco Method – Simple Capitalization – Epoch *n*

Epoch (*k*)	I_k^n	A_k^n	P_k^n	S_k^n
0	938.97	0.00	938.97	100,000.00
1	860.72	7,902.97	8,763.69	92,097.03
2	782.47	7,981.22	8,763.69	84,115.81
3	704.23	8,059.47	8,763.69	76,056.34
4	625.98	8,137.72	8,763.69	67,918.62
5	547.73	8,215.96	8,763.69	59,702.66
6	469.48	8,294.21	8,763.69	51,408.45
7	391.24	8,372.46	8,763.69	43,035.99
8	312.99	8,450.70	8,763.69	34,585.29
9	234.74	8,528.95	8,763.69	26,056.34
10	156.49	8,607.20	8,763.69	17,449.14
11	78.25	8,685.45	8,763.69	8,763.69
12	0.00	8,763.69	8,763.69	0.00
$\sum$	6,103.29	100,000.00	106,103.29	

3. The German Method Approach with Simple Interest

As the German method theory, when using simple interest, is well described in Lachtermacher and de Faro (2024), we will only replicate the results of our example for both focal dates.
Tables 4 and 5 present the corresponding evolution of the debt, using the German Method with simple capitalization.

Table 4 – Evolution of the Debt – German Method – Focal Date Epoch 0

Epoch (k)	I_k	A_k^N	$A^C = P^C$	P^N	S_k^N	S_k^C	S_k
0	973.21	0.00	0.00	973.21	2,679.30	97,320.70	100,000.00
1	892.11	222.78	8,110.06	669.33	2,902.08	89,210.64	92,112.72
2	811.01	141.68	8,110.06	669.33	3,043.75	81,100.58	84,144.34
3	729.91	60.58	8,110.06	69.33	3,104.33	72,990.53	76,094.86
4	648.80	20.52	8,110.06	669.33	3,083.81	64,880.47	67,964.28
5	567.70	101.62	8,110.06	669.33	2,982.18	56,770.41	59,752.59
6	486.60	182.72	8,110.06	669.33	2,799.46	48,660.35	51,459.81
7	405.50	263.83	8,110.06	669.33	2,535.63	40,550.29	43,085.93
8	324.40	344.93	8,110.06	669.33	2,190.71	32,440.23	34,630.94
9	243.30	426.03	8,110.06	669.33	1,764.68	24,330.18	26,094.86
10	162.20	507.13	8,110.06	669.33	1,257.56	16,220.12	17,477.67
11	81.10	588.23	8,110.06	669.33	669.33	8,110.06	8,779.39
12	0.00	669.33	8,110.06	669.33	0.00	0.00	0.00
$\sum$	6,325.85	2,679.30	97,320.70	9,005.14			

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Table 5 – Evolution of the Debt – German Method – Focal Date Epoch *n*

Epoch (k)	I_k	A_k^N	$A^C = P^C$	P^N	S_k^N	S_k^C	S_k
0	938.97	0.00	0.00	938.97	6,103.29	93,896.71	100,000.00
1	860.72	78.25	7,824.73	938.97	6,025.04	86,071.99	92,097.03
2	782.47	156.49	7,824.73	938.97	5,868.54	78,247.26	84,115.81
3	704.23	234.74	7,824.73	938.97	5,633.80	70,422.54	76,056.34
4	625.98	312.99	7,824.73	938.97	5,320.81	62,597.81	67,918.62
5	547.73	391.24	7,824.73	938.97	4,929.58	54,773.08	59,702.66
6	469.48	469.48	7,824.73	938.97	4,460.09	46,948.36	51,408.45
7	391.24	547.73	7,824.73	938.97	3,912.36	39,123.63	43,035.99
8	312.99	625.98	7,824.73	938.97	3,286.38	31,298.90	34,585.29
9	234.74	704.23	7,824.73	938.97	2,582.16	23,474.18	26,056.34
10	156.49	782.47	7,824.73	938.97	1,799.69	15,649.45	17,449.14
11	78.25	860.72	7,824.73	938.97	938.97	7,824.73	8,763.69
12	0.00	938.97	7,824.73	938.97	0.00	0.00	0.00
$\sum$	6,103.29	6,103.29	93,896.71	12,206.57			

4. Comparison of German and Tedesco Methods

Due to the great similarity between the German and Tedesco methods, it is important to compare the interest paid by the client to the financing company. The company granting the financing should choose the method that generates the highest interest income per unit of capital borrowed; thus, maximizing its profit.

In the case of simple capitalization, this will depend on the focal date chosen by the financial institution. Therefore, we will perform the analysis for each focal date under study.

4.1 Focal Date – Epoch 0

We will focus our attention on the percentage of interest paid per unit of capital borrowed, varying the financing interest rate and the financing term.

Table 6 presents, for the two methods under study and focal date at epoch 0, interest rates of 0.5%, 1.0% and 2.0% and terms of 5 to 30 years. These values consist of the most used rates and terms in Brazil.

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Table 6. Percentage of the total of interest paid over the loan – Focal Date -Epoch 0

n	German Amortization System			Tedesco Amortization System		
	0.50%	1.00%	2.00%	0.50%	1.00%	2.00%
60	14.527	27.911	52.337	14.532	27.945	52.519
120	27.785	52.267	95.709	27.802	52.359	96.132
180	40.297	74.746	135.067	40.329	74.899	135.714
240	52.232	95.911	171.860	52.278	96.124	172.712
300	63.701	116.088	206.816	63.763	116.359	207.859
360	74.784	135.483	240.368	74.861	135.809	241.587

From the point of view of total interest income, the Tedesco method generates a slightly higher value than the German method. Therefore, from this point of view it should be chosen by the financing company.

However, a more comprehensive analysis consists in assessing the present values of the sequences of interest payments, considering the cost of capital of the financial company.

Denote as $V_T(\rho)$ the present value of the sequence of interest paid by the customer during financing using the Tedesco method, and by $V_G(\rho)$ when using the German method as given by equations 21 and 22 respectively. Where ρ is the periodic cost of capital of the financing company.

We have:

$$V_T(\rho) = \sum_{k=0}^{n} I_k \times (1+\rho)^{-k} \tag{21}$$

$$V_G(\rho) = \sum_{k=0}^{n} J_k \times (1+\rho)^{-k} \tag{22}$$

Tables 7, 8 and 9 show the present values for financing interest rates of 0.5% and 1.0%, per month, annual opportunity cost ρ_a ranging from 5% to 30% and financing terms of 10, 20 and 30 years.

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Table 7 – Present Value of Interest Sequence – n =120 – F=100,000.00

Cost of Capital		i=0.5%p.m,		i=1.0%p.m,	
ρ_a	ρ	$V_T(\rho)$	$V_G(\rho)$	$V_T(\rho)$	$V_G(\rho)$
5%	0.407%	23,528.68	23,801.34	43,966.56	44,773.31
10%	0.797%	20,318.13	20,775.10	37,707.21	39,080.56
15%	1.171%	17,848.30	18,422.68	32,924.78	34,655.38
20%	1.531%	15,907.78	16,556.36	29,191.13	31,144.58
25%	1.877%	14,354.22	15,048.62	26,219.59	28,308.34
30%	2.210%	13,089.46	13,810.83	23,813.57	25,979.91

Table 8 – Present Value of Interest Sequence – n=240 – F=100,000.00

Cost of Capital		i=0.5%p.m,		i=1.0%p.m,	
ρ_a	ρ	$V_T(\rho)$	$V_G(\rho)$	$V_T(\rho)$	$V_G(\rho)$
5%	0.407%	37,329.32	38,749.90	67,344.86	71,154.56
10%	0.797%	28,419.27	30,417.43	50,507.67	55,854.05
15%	1.171%	22,742.90	24,933.36	39,957.03	45,783.93
20%	1.531%	18,913.56	21,126.95	32,940.19	38,794.39
25%	1.877%	16,201.82	18,364.81	28,030.62	33,722.42
30%	2.210%	14,201.68	16,284.85	24,445.43	29,903.09

Table 9 – Present Value of Interest Sequence – n=360 – F=100,000.00

Cost of Capital		i=0.5%p.m,		i=1.0%p.m,	
ρ_a	ρ	$V_T(\rho)$	$V_G(\rho)$	$V_T(\rho)$	$V_G(\rho)$
5%	0.407%	45,342.49	48,598.05	79,900.51	88,043.17
10%	0.797%	31,212.42	35,173.53	53,913.21	63,722.50
15%	1.171%	23,510.98	27,424.72	40,084.47	49,684.28
20%	1.531%	18,845.76	22,512.47	31,859.65	40,784.96
25%	1.877%	15,775.54	19,164.33	26,519.44	34,719.25
30%	2.210%	13,621.37	16,751.23	22,809.29	30,347.55

Now, considering the present value of interest income, the German method generates a higher value than the Tedesco method. Therefore, it should be chosen by the financing company, from this point of view. Which should prevail over the comparison of the total income seen previously, since it considers the cost of capital of the financing company.

It should be noted that the benefit of applying either of the methods decreases with an increase in the term of the loan and in the capital cost of the financing company.

4.2. Focal date – Epoch n

Considering the focal date at the end of the financing term, epoch *n*, we will redo our analysis on the percentage of interest paid per unit of capital borrowed, varying the interest rate and the financing term.

Table 10 presents, for the two methods under study and focal date in epoch *n*, interest rates of 0.5%, 1.0% and 2.0% and terms of 5 to 30 years, the corresponding results. These values represent the most used rates and terms in Brazil.

Table 10. Percentage of the total of interest paid over the loan – Focal Date -Epoch *n*

n	German Amortization System			Tedesco Amortization System		
	0.50%	1.00%	2.00%	0.50%	1.00%	2.00%
60	23.225	37.695	54.751	23.225	37.695	54.751
120	31.153	47.507	64.413	31.153	47.507	64.413
180	37.598	54.649	70.674	37.598	54.649	70.674
240	42.939	60.080	75.062	42.939	60.080	75.062
300	47.438	64.349	78.308	47.438	64.349	78.308
360	13.232	23.372	37.888	13.232	23.372	37.888

As can be seen in Tables 3 and 5, for the case of our simple example, and in Table 10 for the cases under analysis, contractual interest rates of 0.5%, 1.0% and 2.0% per month and terms of 5 to 30 years, the total interest paid in both methods is the same. Therefore, from this point of view, the choice of method would be indifferent to the financing company.

Denoting as $V_T'(\rho)$ the present value of the sequence of interest paid by the customer during financing using the Tedesco method, and as $V_G'(\rho)$ when using the German method, given by equations 23 and 24, where ρ is the cost of capital of the financing company, we have:

$$V_T'(\rho) = \sum_{k=0}^{n} I_k \times (1+\rho)^{-k} \tag{23}$$

$$V_G'(\rho) = \sum_{k=0}^{n} J_k' \times (1+\rho)^{-k} \tag{24}$$

Tables 11, 12 and 13 show the present values for financing interest rates of 0.5% and 1.0%, per month, annual capital costs ranging from 5% to 30% and financing terms of 10, 20 and 30 years.

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Table 11. Present Value of Interest Sequence – *n*=120 – *F*=100,000.00

Cost of Capital		*i*=0.5%p.m.		*i*=1.0%p.m.	
ρ_a	ρ	$V_T(\rho)$	$V_G(\rho)$	$V_T(\rho)$	$V_G(\rho)$
5%	0.407%	19,894.62	19,894.62	32,290.03	32,290.03
10%	0.797%	17,365.10	17,365,10	28,184.48	28,184.48
15%	1.171%	15,398.81	15,398,81	24,993.08	24,993.08
20%	1.531%	13,838.82	13,838,82	22,461.13	22,461.13
25%	1.877%	12,578.56	12,578,56	20,415.67	20,415.67
30%	2.210%	11,543.94	11,543,94	18,736.43	18,736.43

Table 12. Present Value of Interest Sequence – *n*=240 – *F*=100,000.00

Cost of Capital		*i*=0.5%p.m.		*i*=1.0%p.m.	
ρ_a	ρ	$V_T(\rho)$	$V_G(\rho)$	$V_T(\rho)$	$V_G(\rho)$
5%	0.407%	27,892.91	27,892.91	40,542.75	40,542.75
10%	0.797%	21,895.04	21,895.04	31,824.76	31,824.76
15%	1.171%	17,947.51	17,947.51	26,086.96	26,086.96
20%	1.531%	15,207.58	15,207.58	22,104.44	22,104.44
25%	1.877%	13,219.34	13,219.34	19,214.51	19,214.51
30%	2.210%	11,722.14	11,722.14	17,038.31	17,038.31

Table 13. Present Value of Interest Sequence – *n*=360 – *F*=100,000.00

Cost of Capital		*i*=0.5%p.m.		*i*=1.0%p.m.	
ρ_a	ρ	$V_T(\rho)$	$V_G(\rho)$	$V_T(\rho)$	$V_G(\rho)$
5%	0.407%	30,827.21	30,827.21	41,817.30	41,817.30
10%	0.797%	22,311.63	22,311.63	30,265.87	30,265.87
15%	1.171%	17,396.32	17,396.32	23,598.22	23,598.22
20%	1.531%	14,280.34	14,280.34	19,371.37	19,371.37
25%	1.877%	12,156.51	12,156.51	16,490.38	16,490.38
30%	2.210%	10,625.81	10,625.81	14,413.98	14,413.98

As can be seen in tables 3 and 5, for the case of our simple example, and in Table 11, 12 and 13 for the cases under analysis, contractual interest rates of 0.5% and 1.0% per month, and terms of 10 to 30 years, the present value of the interest sequences paid in both methods are the same.

Therefore, also from this point of view, the choice of method would be indifferent to the financing company.

However, it should be noted that the benefit of applying either of the methods decreases with an increase in the term of the loan and in the capital cost of the financing company.

5. Conclusion

This article extended a version of the Tedesco method, as described in Palestini (2017), which considers compound capitalization, for simple capitalization. Given its similarity to the German method, as used in Brazil, since both are based on interest payments at the beginning of the period, a comparison between the two methods was made from the perspective of the financing company.

If the focal date at epoch *n* (end of the term of the contract), is specified, the financing company would be indifferent between the two methods under scrutiny. However, if epoch 0 is the one specified, the financing company will be better if it chooses to implement the German method.

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