

# Property Finance: An International Approach

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**Loan Repayment, Interest and Renegotiation**

**Chapter 4**

## Agenda

- 4.1 Bullet payments
- 4.2 Pre-amortizing (semi-bullet)
- 4.3 Balloon payments
- 4.4 Fully amortizing repayment plans
- 4.5 Other repayment schedules
- 4.6 Restructuring and renegotiation of real estate loan

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## 4.1 Bullet Payments

Loans providing for bullet payments, also called zero amortizing (interest only) constant payment loans, require the payment of the entire principal of the loan upon maturity of the loan.

The outstanding loan balances at the beginning of each period will be a constant value equalling the loan value.

Loan Amount	€1,000,000
Interest rate	6.00%
Maturity	5

<b>Interest-only repayment plan (bullet)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Loan Balance BoP	€1,000,000	€1,000,000	€1,000,000	€1,000,000	€1,000,000
Drawdown	€1,000,000				
Interest accrued	€60,000	€60,000	€60,000	€60,000	€60,000
<i>Interest paid</i>	€60,000	€60,000	€60,000	€60,000	€60,000
<i>Capital Repayment</i>					€1,000,000
Debt service (instalment)	€60,000	€60,000	€60,000	€60,000	€1,060,000
Loan Balance EoP	€1,000,000	€1,000,000	€1,000,000	€1,000,000	€0



## 4.2 Pre-amortizing (semi-bullet)

Pre-amortizing is an interest-only repayment plan that stipulates the payment of interest only for a certain period of time.

The period is referred to as the interest-only period, as against the subsequent repayment period during which interest is paid regularly and the principal loaned is repaid.

Loan Amount € 1,000,000  
Interest rate 6.00%

Interest only Maturity 3  
Maturity 5

<b>Pre-amortizing (semi-bullet)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Loan Balance BoP	€ 1,000,000	€ 1,000,000	€ 1,000,000	€ 1,000,000	€ 500,000
Drawdown	€ 1,000,000				
Interest accrued	€ 60,000	€ 60,000	€ 60,000	€ 60,000	€ 30,000
<i>Interest paid</i>	€ 60,000	€ 60,000	€ 60,000	€ 60,000	€ 30,000
<i>Capital Repayment</i>	€ 0	€ 0	€ 0	€ 500,000	€ 500,000
Debt service (instalment)	€ 60,000	€ 60,000	€ 60,000	€ 560,000	€ 530,000
Loan Balance EoP	€ 1,000,000	€ 1,000,000	€ 1,000,000	€ 500,000	€ 0



## 4.3 Balloon payments (A)

Loans requiring the payment of interest and the redemption of part of the principal during the term of the loan: the outstanding principal will then be repaid in full upon maturity, unless the term is extended.

There is a non-zero outstanding loan balance at the end of the loan term, thus allowing the borrower to make periodical payments lower than those under the provision of a fully amortizing loan. The value of the outstanding loan balance at the end is called balloon payment (BP).

In order to calculate the value of the constant periodical payment (CP) the present value of an annuity formula is applied:

$$PV = \sum_{t=1}^n \frac{CP}{\left(1 + \frac{i}{12}\right)^t} + \frac{BP}{\left(1 + \frac{i}{12}\right)^n} \quad \text{solving it for CP.}$$



## 4.3 Balloon payments (B)

### Partially Amortizing, Costant Payment Mortgage

Loan Amount	€ 100,000
Maturity (years)	20
Interest rate (annual)	6.00%
Interest rate (monthly)	0.49%
Baloon payment	€ 60,000

**Fixed Monthly Payment €574.97**

(1)	Month	(2) Loan Balance BoP	(3) Monthly Payment	(4) Interest	(5) Capital Repaymen t	(6) Loan Balance EoP
	1	€ 100,000.00	€ 574.97	€ 486.76	€ 88.21	€ 99,911.79
	2	€ 99,911.79	€ 574.97	€ 486.33	€ 88.64	€ 99,823.14
	3	€ 99,823.14	€ 574.97	€ 485.89	€ 89.08	€ 99,734.07
	4	€ 99,734.07	€ 574.97	€ 485.46	€ 89.51	€ 99,644.56
	5	€ 99,644.56	€ 574.97	€ 485.02	€ 89.94	€ 99,554.61
	236	€ 61,394.16	€ 574.97	€ 298.84	€ 276.13	€ 61,118.03
	237	€ 61,118.03	€ 574.97	€ 297.50	€ 277.47	€ 60,840.55
	238	€ 60,840.55	€ 574.97	€ 296.14	€ 278.83	€ 60,561.73
	239	€ 60,561.73	€ 574.97	€ 294.79	€ 280.18	€ 60,281.55
	240	€ 60,281.55	€ 574.97	€ 293.42	€ 281.55	€ 60,000.00



## 4.4 Fully amortizing repayment plans

- ✓ A constant periodical payment – monthly, quarterly or annually – is calculated based on the loan value at a fixed interest rate. Each periodical payment thus contains both an interest payment component and the repayment of principal
- ✓ The interest payment component is simply calculated applying the relevant interest rate (fixed or floating) to the outstanding loan balance at the beginning of the period, while the repayment of the principal is the difference between the constant and the interest payment
- ✓ For loans which are repayable in installments, a repayment plan will be agreed upon in advance, which may come in different forms:

<b>4.4.1 Fixed-Capital Loan Repayment Plan</b>	Each installment will repay a fixed principal component, along with a decreasing interest component calculated on the outstanding debt; only the latter component varies over time.
<b>4.4.2 Floating-Rate Loan Repayment Plan</b>	The outstanding loan balance at the end of each payment period depends on interest rates level in the market.
<b>4.4.3 Loan with Interest Rate Caps</b>	A Cap (acting as a limit) is imposed on the increase that the interest rate may follow.



## 4.4 Fully amortizing repayment plans

### 4.4.1 Fixed-Capital Loan Repayment Plan

- ✓ Value of constant periodical payment: 
$$CP = \frac{PV}{\sum_{t=1}^n \left(1 + \frac{i}{12}\right)^t}$$
- ✓ At the end of the loan, the original debt amount will be completely amortized and reimbursed.

Loan Amount	€1,000,000
Interest rate	6.00%
Maturity	5

Fixed-instalment repayment plan	1	2	3	4	5
Loan Balance BoP	€1,000	€823	€635	€435	€224
Drawdown	€1,000				
Interest accrued	€60	€49	€38	€26	€13
Interest paid	€60	€49	€38	€26	€13
Capital Repayment	€177	€188	€199	€211	€224
Debt service (instalment)	€237	€237	€237	€237	€237
Loan Balance EoP	€1,000	€823	€635	€435	€224





## 4.4 Fully amortizing repayment plans

### 4.4.2 Floating-Rate Loan Repayment Plan

Fully Amortizing, Costant Payment Mortgage

Loan Amount	€ 100,000
Maturity (years)	20
Interest rate (annual)	6.00%
Interest rate (monthly)	0.49%

**Fixed Monthly Payment €707.29**

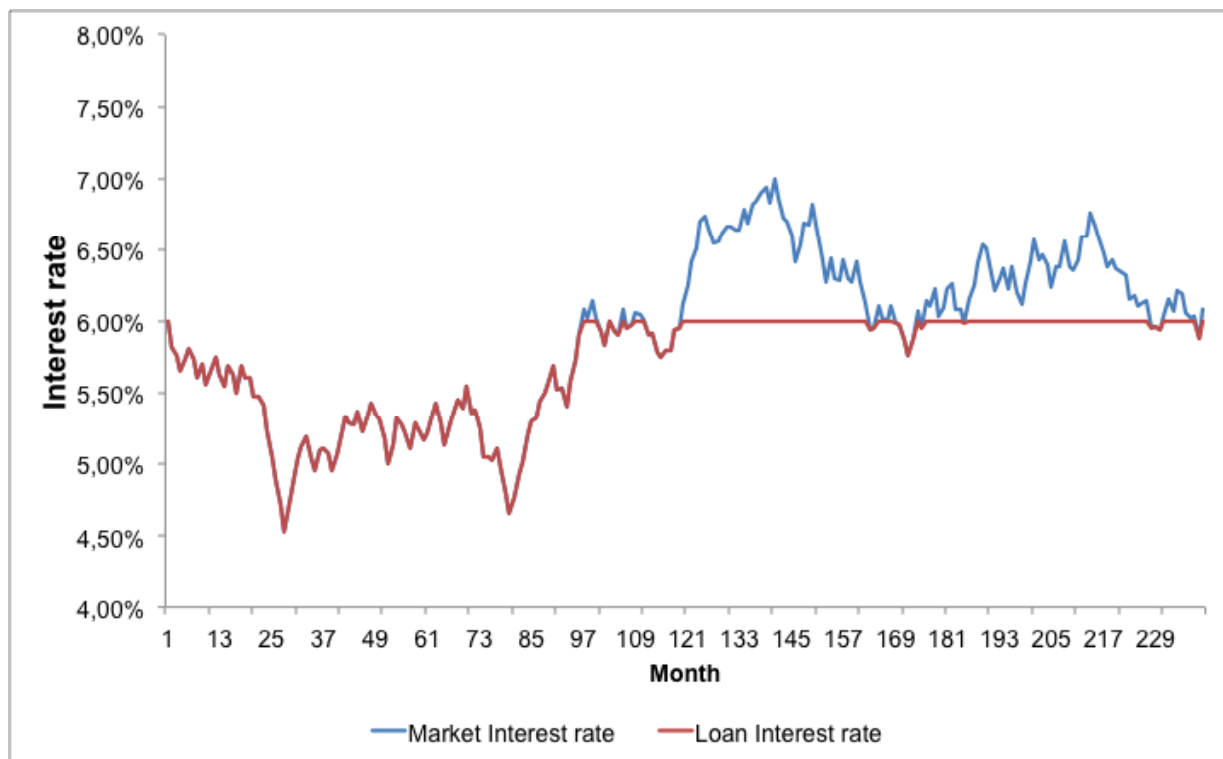
(1)	Month	(2) Loan Balance BoP	(3) Monthly Payment	(4) Interest	(5) Capital Repaymen t	(6) Loan Balance EoP
	1	€ 100,000.00	€ 707.29	€ 486.76	€ 220.54	€ 99,779.46
	2	€ 99,779.46	€ 707.29	€ 485.68	€ 221.61	€ 99,557.85
	3	€ 99,557.85	€ 707.29	€ 484.60	€ 222.69	€ 99,335.16
	4	€ 99,335.16	€ 707.29	€ 483.52	€ 223.77	€ 99,111.39
	5	€ 99,111.39	€ 707.29	€ 482.43	€ 224.86	€ 98,886.53
	236	€ 3,485.40	€ 707.29	€ 16.97	€ 690.33	€ 2,795.07
	237	€ 2,795.07	€ 707.29	€ 13.61	€ 693.69	€ 2,101.39
	238	€ 2,101.39	€ 707.29	€ 10.23	€ 697.06	€ 1,404.32
	239	€ 1,404.32	€ 707.29	€ 6.84	€ 700.46	€ 703.87
	240	€ 703.87	€ 707.29	€ 3.43	€ 703.87	€ 0.00



## 4.4 Fully amortizing repayment plans

### 4.4.3 Loan with Interest Rate Cap (A)

In order to limit the upside risk of an elevated payment for the borrower, a Cap is imposed on the increase that the interest rate may follow.



In the example, whenever prevailing interest rates in the market are below the 6% level, monthly payments are based on market one, while in case interest rates are above that level, 6% is the interest rate applied.

## 4.4 Fully amortizing repayment plans

### 4.4.3 Loan with Interest Rate Cap (B)

Fully Amortizing, Constant Payment loan, Floating rate

Loan Amount	€ 100,000
Maturity (years)	20
Interest rate (annual)	6.00%
Interest rate (monthly)	0.49%

(1) Month	Interest rate (annual)	Interest rate (monthly)	(2) Loan Balance BoP	(3) Monthly Payment	(4) Interest	(5) Capital Repayment	(6) Loan Balance EoP
1	6.00%	0.49%	€ 100,000.00	€ 707.29	€ 486.76	€ 220.54	€ 99,779.46
2	5.94%	0.48%	€ 99,779.46	€ 704.31	€ 481.34	€ 222.97	€ 99,556.49
3	5.81%	0.47%	€ 99,556.49	€ 697.28	€ 469.97	€ 227.31	€ 99,329.18
4	5.82%	0.47%	€ 99,329.18	€ 697.51	€ 469.23	€ 228.28	€ 99,100.90
5	5.76%	0.47%	€ 99,100.90	€ 694.39	€ 463.56	€ 230.83	€ 98,870.07
236	7.19%	0.58%	€ 3,571.00	€ 726.68	€ 20.72	€ 705.96	€ 2,865.04
237	7.06%	0.57%	€ 2,865.04	€ 726.50	€ 16.33	€ 710.16	€ 2,154.88
238	6.94%	0.56%	€ 2,154.88	€ 726.36	€ 12.08	€ 714.28	€ 1,440.60
239	6.81%	0.55%	€ 1,440.60	€ 726.26	€ 7.94	€ 718.32	€ 722.28
240	6.77%	0.55%	€ 722.28	€ 726.23	€ 3.95	€ 722.28	€ 0.00





## 4.5 Other repayment schedules

### 4.5.1 Negative Amortizing Constant Payment Loan

The outstanding loan balance at the end of the loan term will be greater than the loan amount itself and the periodic payment will be lower than the interest amount due periodically.

#### Negative Amortizing, Constant Payment Mortgage

Loan Amount	€ 100,000
Maturity (years)	20
Interest rate (annual)	6.00%
Interest rate (monthly)	0.49%
Final payment	€ 125,000

**Fixed Monthly Payment €431.62**

(1) Month	(2) Loan Balance BoP	(3) Monthly Payment	(4) Interest	(5) Capital Repayment	(6) Loan Balance EoP
1	€ 100,000.00	€ 431.62	€ 486.76	-€ 55.13	€ 100,055.13
2	€ 100,055.13	€ 431.62	€ 487.02	-€ 55.40	€ 100,110.54
3	€ 100,110.54	€ 431.62	€ 487.29	-€ 55.67	€ 100,166.21
4	€ 100,166.21	€ 431.62	€ 487.56	-€ 55.94	€ 100,222.15
5	€ 100,222.15	€ 431.62	€ 487.84	-€ 56.22	€ 100,278.37
236	€ 124,128.65	€ 431.62	€ 604.20	-€ 172.58	€ 124,301.23
237	€ 124,301.23	€ 431.62	€ 605.04	-€ 173.42	€ 124,474.65
238	€ 124,474.65	€ 431.62	€ 605.89	-€ 174.27	€ 124,648.92
239	€ 124,648.92	€ 431.62	€ 606.73	-€ 175.11	€ 124,824.03
240	€ 124,824.03	€ 431.62	€ 607.59	-€ 175.97	€ 125,000.00



## 4.5 Other repayment schedules

### 4.5.2 Declining Payment Loan with Constant Amortizing

The monthly payment is calculated as the sum of a constant amortization plus the interest payment on the outstanding loan balance at the beginning of the period. The monthly payment will be decreasing to a value close to the amortization value.

#### Constant Amortizing Loan

Loan Amount	€ 100,000
Maturity (years)	20
Interest rate (annual)	6.00%
Interest rate (monthly)	0.49%

<b>Amortization</b>	<b>€ 416.67</b>
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(1) Month	(2) Loan Balance BoP	(3) Interest	(4) Amortization	(5) Monthly Payment	(6) Loan Balance EoP
1	€ 100,000.00	€ 486.76	€ 416.67	€ 903.42	€ 99,583.33
2	€ 99,583.33	€ 484.73	€ 416.67	€ 901.39	€ 99,166.67
3	€ 99,166.67	€ 482.70	€ 416.67	€ 899.37	€ 98,750.00
4	€ 98,750.00	€ 480.67	€ 416.67	€ 897.34	€ 98,333.33
5	€ 98,333.33	€ 478.64	€ 416.67	€ 895.31	€ 97,916.67
236	€ 2,083.33	€ 10.14	€ 416.67	€ 426.81	€ 1,666.67
237	€ 1,666.67	€ 8.11	€ 416.67	€ 424.78	€ 1,250.00
238	€ 1,250.00	€ 6.08	€ 416.67	€ 422.75	€ 833.33
239	€ 833.33	€ 4.06	€ 416.67	€ 420.72	€ 416.67
240	€ 416.67	€ 2.03	€ 416.67	€ 418.69	€ 0.00



## 4.6 Restructuring and renegotiation of real estate loans

**Restructuring** → transactions concluded between the lender and the borrower and intended to redefine the overall agreement of the latter's debt exposure (also classified using the term consolidation)

**Renegotiation** → one individual financial relationship or a series of relationships in which some elements of the loan agreement (term, interest rate, repayment plan) are amended, not necessarily in order to deal with a situation in which the borrower has defaulted

Restructuring techniques may involve any of the following:

**4.6.1 Grant of a new loan**

**4.6.2 Deferral of payment deadlines**

**4.6.3 Restructuring agreement**



## 4.6 Restructuring and renegotiation of real estate loans

### 4.6.1 Grant of a new loan

- ✓ Restructuring could involve the grant of a new loan, thereby enabling overdue outstanding debts to be paid
- ✓ The new loan will mean that it is necessary to conclude a new loan agreement and reconstitute all of the securities ex novo
- ✓ The borrower will therefore have to bear all of the costs (including taxes) relating to the redemption of the existing loan, as well as those relating to the granting of the new loan



## 4.6 Restructuring and renegotiation of real estate loans

### 4.6.2 Deferral of Payment Deadlines

A deferral replaces the overdue time limit with a new time limit.

A distinction is drawn between a deferral and a respite period: in the latter case the borrower only ceases to be in arrears with payments after it has complied with the obligation within the deferred time limit.

This means that a deferral involves the replacement of the overdue time limit with a new one, with the result that the borrower is no longer in arrears (and does not pay the default interest). During a respite period on the other hand, the status of the loan as being in arrears continues until obligations are honored upon conclusion of the respite period.





## 4.6 Restructuring and renegotiation of real estate loans

### 4.6.3 Restructuring Arrangement

- ✓ The conclusion of a restructuring agreement is generally premised upon a standstill agreement (i.e. *a pactum de non petendo*, an agreement which has the purpose of granting a deferral of loan payment deadlines which are overdue or have not yet fallen due). Such an agreement does not redeem the loan, but rather amends the terms of original loan agreement
- ✓ As regards default interests, the bank will generally require that the borrower pays such interest (either in full or in part) before concluding the restructuring agreement. Alternatively, a separate agreement may be concluded to regulate their repayment
- ✓ The renegotiation agreements concluded by bank and borrower acknowledge the level of the debt and set forth arrangements to govern the repayment of the overdue amounts along with the outstanding debt. Such agreements may come in various forms:
  - an agreement that the interest provided for under the loan agreement (which have not changed) will accrue on the overdue amounts instead of interest on arrears
  - an agreement that fixed-rate loan repayments will be made at a level which is sustainable for the borrower (and hence lower than that originally agreed to) until the original maturity of the loan

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