# THE DEVELOPMENT AND USE OF INTERACTIVE CASH FLOW MODELS IN RESIDENTIAL CONSTRUCTION LENDING PROJECTS

Prepared for



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Housing Sector Reform Project II Project 110-0008 U.S. Agency for International Development, USAID/Moscow Contract No. EPE-0008-C-00-5118-00, RFS No. 213

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1996 UI Project 06611-213

### THE DEVELOPMENT AND USE OF INTERACTIVE CASH FLOW MODELS IN RESIDENTIAL CONSTRUCTION LENDING PROJECTS

#### CASH FLOW MODELS: PRINCIPLES OF DEVELOPMENT AND OPERATION

Financial analysis of an investment or lending project is a complex aggregate of rather complicated tools and approaches to evaluating feasibility of the project. One of these tools is the simulation of cash flows during financing and completion of such a project.

The concept of cash flow analysis consists in evaluating and forecasting future inflows and expenses connected with a project under consideration for all parts involved in the project as well as for the total project budget. Cash flow analysis provides a full set of indicators and information necessary for bank experts to understand the whole mechanism of the project from financial and economic points of view. Together with other instruments (such as market and borrower analysis), examining project cash flow is an important and necessary step preceding the decision to accept a loan application and subsequently to approve the loan.

A cash flow model serves as base for cash flow analysis. The general concept of a cash flow model is to combine all types of financial information about the project into one interactive table. It allows the user to present all costs and sales schedules, generate project inflows and outflows, and further calculate project budget deficits to be financed by the bank. It also makes it possible to calculate different ratios for evaluating risk levels and other indicators of the project and loan stability.

There are different types and forms of cash flow models (all the same in their concept). Below we will describe one of the possible forms of cash flow model. The third section of this report presents an example of a developed cash flow model.

#### COMPILATION OF A CASH FLOW MODEL

A sample cash flow model presented in Annex A consists of six major sections:

# Section 1. Section 1 reflects proposed and planned schedules of units sales depending on their availability. Information presented in this section should be a result of a developer's proposal and further negotiations of the bank and developer experts supported by an independent market and project evaluation carefully checked and analyzed by all parties involved. The following items are included in this section:

Item 1 Number of units under construction. In the case of a multi-apartment building this number can be entered for the first month only, and computer formulas will automatically extend it to the end of the project period. This number will be necessary for further calculations (multi-building projects require computer input at various stages as new building are started).

Note: For this and all other items of the model only the cells with gray background should be filled by the user. All other cells are automatically calculated by the program.

- Item 2 Transfer to city. Reflects number of units not for sale. These might be units for transfer to the municipality or any other company or enterprise participating in the project in exchange for land rights, construction materials, etc.
- Item 3 Units for sale. Number of units to be built and sold in the market and which will be paid for by purchasers.
- Item 4 Units sold. Numbers of units to be sold during each month according to the agreed sales plan. "Sold unit" here means a unit with already assigned ownership rights according to a signed sales contract (not the same as "Units paid"—see Items 6-7).
- Item 5 Units available. Number of units available for sale or other use. Reduces to 0 by the end of the project construction period.
- Items 6-7 Units paid. Number of units to be paid for in full as described in the agreed sales plan. This figure is calculated automatically in accordance with the sales schedule (Item 4).
- Items 8-9 Average sale prices. To be entered by the user in accordance with agreed sales plan.
- Item 10 Cost of construction. Calculated automatically from the information entered below. Serves for comparison of



sale prices and costs of construction during whole project construction period.

**# Section 2.** Section 2 represents both hard and soft costs breakdown schedules agreed on and certified by all parties involved in the project. Hard costs, or direct costs, reflect pure construction expenses (land, design, labor, materials). These costs should strictly conform to the construction costs breakdown schedules agreed on and certified by bank, borrower and contractor.

- Items 11-75 Hard costs breakdown schedule. To be entered by the user in accordance with certified hard costs breakdown schedule.
- Items 76-90 Soft costs breakdown schedule. To be entered by the user in accordance with certified soft costs breakdown schedule.
- Item 91-94 Totals for hard-plus-soft costs breakdown schedules. This total is calculated automatically.

# Section 3. Section 3 represents all expenses, or outflows, of the project. Inflows (uses) are presented in section four below.

- Items 95-97 Borrower's equity. It is calculated automatically using the total amount of equity entered by operator in Item #124 and the bank policy not to advance loan funds before borrower's equity is spent in full.
- Item 98 Proceeds of units sales. Rubles received from payments for sold apartments.
- Item 99 Transfer costs. Costs associated with notarization and other applicable fees occurring at the moment of signing sale contracts and transferring units ownership rights. % of unit sale prices should be entered into the corresponding formula.
- Items 100-101 Net proceeds of units sales. Equal to the proceeds of units sales less transfer costs.
- Item 102 Total cash sources. Total of inflows to the project budget excluding the construction loan.

**# Section 4.** Section 4 consists of total inflows and outflows to the project balance prior to loan advances. All numbers in the section are calculated automatically.

- Item 103 Prior project balance
- Item 104 Net inflows
- Item 105 Total expenditures (outflows)
- Item 106 Ending project balance

**# Section 5.** Section 5 reflects the automatically calculated cash flows for the borrower and the bank. Final adjusted amounts of construction loan advances and the borrower's equity necessary to finance the project are determined in this section. The schedule of cash flows and payments are established by the bank's policy and confirmed in the corresponding construction loan agreement.

- Item 107 Loan proceeds to borrower (calculated). Amounts of money necessary to continue the project. It is equal to total expenditures less net inflows (item 105 – item 104). For analytical purposes only; actual loan advance amounts will be calculated further.
- Item 108 Borrower's equity for temporary financing of the project. According to the terms of the example construction loan agreement, the borrower is to finance all project expenses during a given month from its own sources. At the end of each month the borrower submits to the bank applicable documentation confirming all its actual expenses. The bank then reviews all amounts spent and reimburses the borrower (see Item 109). Such a scheme allows the bank to shift many construction risks to the borrower and advance money only for work actually completed and materials purchased and stored.
- Item 109 Repayment of the borrower's equity for temporary financing of the project. This is equal to item 108 for previous month. For an explanation of the item numbers, see item 108.
- Item 110 Retention. Each time the bank repays to the borrower the amount of the borrower's equity spent during previous



month for temporary financing of the project, the bank retains an amount specified in the construction loan agreement (here 5 percent) which is held by the bank until the loan balance is repaid by the borrower in full or the construction is finished. This method encourages the developer and contractors finish construction as soon as possible. The retained amount falls to 0 by the end of construction or earlier (if the loan balance is repaid in full prior to the end of construction).

- Item 111 Transfer of retention to the borrower. Retention is transferred by the bank back to the borrower who in turn distributes this amount among contractors and subcontractors.
- Item 112 Retention (cumulative). Cumulative for Item 111.
- Items 113-114 Adjusted equity to finance the project. Items 95-96 adjusted by Item 110. Reflects actual investments by the borrower in the project (equity plus retention). Does not include money used by the borrower for temporary financing of the project for maximum period of one month prior to loan advances.
- Item 115 Loan proceeds to borrower.
- Item 116 Loan repayment
- Item 117 Borrower's debt (cumulative). Remaining construction loan balance.

**# Section 6.** Section 6 includes other financial information about the project. Some of it is used for analytical purposes.

- Items 118-119 Net cash flows to the project and NPV of net cash flows to the project; calculated automatically.
- Items 120-121 Net cash flows to the borrower and NPV of net cash flows to the borrower; calculated automatically.
- Items 122-123 Interest rate. The rate is specified in the construction loan agreement; to be entered by the user.

- Item 124 Borrowers equity. This figure is specified in the construction loan agreement; to be entered by the user. See also description of Items 95-97 above.
- Item 125 Borrower's net income; calculated automatically.
- Item 126 Peak Ioan. Maximum unpaid construction Ioan balance; calculated automatically.
- Item 127 Percent coverage. An analytical indicator of loan risk level, equal to borrower's net income divided by peak loan amount. The higher the indicator, the lower the level of estimated loan risk.

The above-described cash flow model form is presented in Annex A.

Annex B presents an example of completed cash flow model which illustrates this example cash flow model and analysis.

In addition, it is necessary to mention that careful development of cash-flow models is important for the evaluation and underwriting stages of a project, but also have further uses during project implementation and the construction process. After having being used for project analysis purposes, these models, which include construction costs and other applicable expense schedules, become a powerful tool for project Being regularly updated in accordance with actual management. expenses occurred, they reflect the current situation in the project and give up-to-date information for forecasting the short-term future of the project as a whole and of the construction loan in particular. Consequently, this is a critical document for both underwriting and managing construction projects and loans to be used by all lending institutions with the goal of minimizing credit risk and making sound loans.

## ANNEX A

## RESIDENTIAL CONSTRUCTION LENDING CASH FLOW MODEL FORMAT

### A Residential Construction Loan Cashflows Model (blank form)

		Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Total
1	Number of units under construction*			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Transfer to city*		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Number of units for sale*		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v	* - total on the project		0	0	0	Ŭ	0	0	0	Ŭ	0	Ŭ		Ŭ	0	0	v	0
4	Lipito cold			1	1	I I						1					L	0
4	Units Solu		1					0			0					0	0	0
э	Units available (cumulative)		0	0	0	0	0	0	0	U	0	0	0	0	U	U	0	0
~			-	_		-			-	-			-	-				
6	Units paid		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Units paid - cumulative		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Average sale price (per unit)	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Average sale price (per 1 sq. meter)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
10	Cost of construction (per 1 sq. meter)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	USES:																	
	HARD COSTS:																	
11	Land																	0
	Pre-design research, design and																	
	reconciliation:																	
12	Geodesic survey of land plot		1	1	1													0
13	Engineering and geological survey																	0
14	Reconciliation of feasibility study																	0
15	Design of the "0" project																	0
16	Receiving of order for demolishing																	0
17	Receiving of order for exervating works																	0
10	Necelving of order for excavaling works																	0
10	Design of architectural and construction part of the																	0
10	besign of architectular and construction part of the																	
19	project																	0
20	Project of water supply line and sewage system																	0
21	Project of healing system and ventilation system																	0
~~	Project of power supply system of the building and																	
22	weak-current power system																	0
23	Project of fire alarm system																	0
24	Reconciliation of the project																	0
25	Receiving of permission for construction works																	0
	I otal for pre-design research, design and																	
26	reconciliation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	?onstrucion costs:																	
	General works:		l															
27	Auxiliary outsite communications																	0
28	Other preliminary works																	0
29	Lease of equipment and expendable materials																	0
30	Total:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		r										1	1			
	works on construction site:															-
31	Demolishing of ramshackle building															0
32	Cleaning of construction site															0
33	Installation of in-site communication					1	1			1	1	1	1			0
34	l otal:	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0	0
35	Excavation works															0
36	Construction of foundation															0
37	Installation of basement walls					r							1			0
	0															
38	Erection of exterior walls															0
39	Erection of interior walls and partitions															0
40	Installation of ceilings and covers															0
41	Installation of roofing															0
42	Installation of windows															0
43	Installation of doors															0
44	Construction of entrances															0
45	Construction of staircases and landings															0
46	Installation of balcony fencing															0
	Finishing works:															
47	Plastering of interior walls															0
48	Preparation of grounding for floors in apartments															0
49	Parquet-floor works															0
50	Carpeting															0
51	Tiling works															0
52	Painting works															0
53	Wallpaper															0
54	Total:	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0	0
	Special works:															
	Interior and exterior works on installation of water															
55	supply line and sewage system															0
56	Interior and exterior works on power supply system															0
57	Installation of weak-current power system															0
	Installation of centralized heating system and															
58	ventilation system															0
59	Works on installation of gas pipe line															0
60	Installation of fire alarm system										<u>.</u>					0
61	Total:	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0	0
62	Finishing of facade															0
63	Accomplishment															0
64	Trash cans and other items															0
65	Other works and expenses			· · · ·												0
66	Total - construction works:	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0	0

67 68	General Contractor's activity: Different fees and payments Supervising																	0
69 70	Overhead costs Total - General Contractor's activity:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	Unexpected costs (5% of total main costs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72 73 74 75	TOTAL HARD COSTS Total hard costs - % Total hard costs - cumulative Total hard costs - %, cumulative	0 0.00% 0 0.00%																
	SOFT COSTS:																	
76 77 78	General costs: Interest on the loan Construction loan fee		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79 80 81 82	Expenses for loan transaction closing: Legal consulting Registration fees Other expenses																	0 0 0
83	Total:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84 85 86	Marketing: Advertising Printed materials																-	0
87 88	Sales agents Total:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89	Other expenses of Developer																	0
90	TOTAL SOFT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 92 93 94	TOTAL USES Total uses - % Total uses - cumulative Total uses - %, cumulative	0 0.00% 0 0.00%	0 0.00% 0 0 0.00%	0 0.00% 0 0.00%														

3

### A Residential Construction Loan Cashflows Model (blank form)

_																		
	CASH SOURCES:																	
OF	E en vite e	0	0		0		0	0	0	0	0	0	0	0	0	0	0	
95		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	U
96	Equity - cumulative	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
97	Equity available	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
08	Procoods of units sales	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	Transier costs (-)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	U
100	Net proceeds of units sales (=)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
101	NPV of net proceeds of units sales	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
102	TOTAL CASH SOURCES (before loan)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
		Ű	0			ů		Ű	Ű	Ű	ů		v				ő	,
103	Prior project balance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	Net inflows (before loan)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
105	Total uses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
106	Ending project balance (before loan)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
100	Enang project balance (before loan)	U	0	0	0	0	0	U	U	0		0	0	0		0	0	U
107	Loan proceeds to borrower (calculated)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Borrower's equity for temporary financing of the project																	
108	(with repayment at the end of the month)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
	Repayment of the borrower's equity for temporary													_		_	-	
109	financing of the loan (from the loan)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	Retainages (E9/)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	Retainages (5%)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	U
111	I ranster of retainages to the borrower		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
112	Retainages (cumulative)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	Adjusted equity to finance the project		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
114	Adjusted equity to finance the project - cumulative		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
115	Loan proceeds to borrower		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	Loan renovment		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	Loan repayment		0	0	0	0	0	0	U	0	0	0	0	0	0	0	0	0
117	Borrower's debt - cumulative		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Ŭ
118	Net cash flows to the project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
119	NPV of net cash flows to the project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	Net cash flows to borrower	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	NPV of not cash flows to borrowor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
121	INF V OF HEL CASH HOWS TO DOTTOWER	0	0	0	0	0	0	U	U	0	0	0	0	0	0	0	0	U
122	Interest rate (per year)																	
123	Interest rate (per month)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
											1				1			
12/	Borrower's equity										1				1			
124											l				l			
105																		
125	Borrower's net income	0																
126	Peak loan	0																
127	% coverage	0.00%																
_																		

## ANNEX B

### CASH FLOW MODEL FOR AN EXAMPLE RESIDENTIAL CONSTRUCTION LENDING PROJECT

#### ANNEX B

### CASH FLOW MODEL FOR AN EXAMPLE RESIDENTIAL CONSTRUCTION LENDING PROJECT

The following tables illustrate cash flow model development for an example residential construction project.

The project has the following main characteristics:

! Property under construction

Multi-apartment housing building consisting of 80 units1 room units:15 (total area 45 m²) + 10 (total area 50 m²)2 room units:20 (total area 60 m²) + 20 (total area 70 m²)3 room units:15 (total area 90 m²)

- ! Loan amount: 1,857,875,000 rubles
- ! Construction loan interest rate: 75 percent annually; interest payments are added regularly to the loan outstanding
- ! Completed units sales proceeds are disbursed primarily to repayment of the loan
- **!** Borrower's equity invested in the project: 600,000,000 rubles
- ! Total project costs: 7,835,661 000 rubles
- ! Project term: 15 months

The structure of the model in the example differs somewhat from the format present in Annex A. This can be explained by:

- I Subdividing units in the example into homogeneous groups by number of rooms and square meters (e.g. 1 room apartments of 45 m<sup>2</sup>, 50 m<sup>2</sup>, etc.) to make the sales proceeds calculation more precise;
- **!** Using in the example two different units sales programs: (1) with immediate payment for the apartment; and (2) with payment by installments in 3 months where the 30 percent downpayment is paid by a purchaser upon closing the unit sales contract, another

30 percent is paid the next month, and the balance (of the sales price on the closing date) is paid the following month.

		Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Total
	Number of units under construction:*																	
1a	Model I		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
1b	Model II		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1c	Model III		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
1d	Model IV		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
1e	Model V		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
1f	Total		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
	Including -																	
	- transfer to buyers:*																	
2aa	Model I		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
2ab	Model II			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2ac	Model III			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2ad	Model IV			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2ae	Model V			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2af	Total		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	- transfer to city:*																	
2ba	Model I			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2bb	Model II			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2bc	Model III			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2bd	Model IV			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2be	Model V			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2bf	Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of units for sale:*																	
3a	Model I		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3b	Model II		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
30	Model III		20	20		0	0	0	0	0	0	0	0	0	0	0	0	0
3d	Model IV		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
30	Model V		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
31	10lai		60	60	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	- total on the project																	
-	Units sold (with immediate payment):																	0
4aa	Model I		-							I I			1	L				0
4ah	Model II																-	0
4ac	Model III		-					5						1	1			7
4ad	Model IV		-					5	5	5					1			16
4ae	Model V		-					5	Ũ	Ŭ				1	1	1	1	9
4af	Total		0	0	0	0	0	15	5	5	0	0	0	2	3	1	1	32
	Units sold (with payments by installments in 3 months):		-	-	-	-	-					-	-		-	-		
4ba	Model I									· · ·								0
4bb	Model II				1	1				2	2	2	2					10
4bc	Model III					2	2			2	2	2	2	1				13
4bd	Model IV											1	1	1	1			4
4be	Model V								1	1				2	2			6
4bf	Total		0	0	1	3	2	0	1	5	4	5	5	4	3	0	0	33

Instantion (conditing):         Instantion (co																		
Unit markable (sumdarie):         O <th></th>																		
Set         Set Add/ i         Set Add/ i <td></td> <td>Units available (cumulative):</td> <td></td>		Units available (cumulative):																
B         Mode/f         M <td>5a</td> <td>Model I</td> <td></td> <td>0 (</td> <td>0 0</td> <td>0</td> <td>C</td>	5a	Model I		0 (	0 0	0	0	0	0	0	0	0	0	0	0	0	0	C
Bookshift       Source       Source <td>5b</td> <td>Model II</td> <td></td> <td>10 10</td> <td>9 0</td> <td>8</td> <td>8</td> <td>8</td> <td>8</td> <td>6</td> <td>4</td> <td>2</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>C</td>	5b	Model II		10 10	9 0	8	8	8	8	6	4	2	0	0	0	0	0	C
90         Mode/ M         50         Mode/ M         Mod/ M         Mod/ M         Mod/ M <td>5c</td> <td>Model III</td> <td></td> <td>20 20</td> <td>20</td> <td>18</td> <td>16</td> <td>11</td> <td>11</td> <td>9</td> <td>7</td> <td>5</td> <td>3</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>- 20</td>	5c	Model III		20 20	20	18	16	11	11	9	7	5	3	1	0	0	0	- 20
50       Modey / with and and any and any and any and any and any and any	5d	Model IV		20 20	20	20	20	15	10	5	5	4	3	2	0	0	0	C
8         7         70         7001 <td>5e</td> <td>Model V</td> <td></td> <td>15 1</td> <td>5 15</td> <td>15</td> <td>15</td> <td>10</td> <td>9</td> <td>8</td> <td>8</td> <td>8</td> <td>8</td> <td>5</td> <td>2</td> <td>1</td> <td>0</td> <td>C</td>	5e	Model V		15 1	5 15	15	15	10	9	8	8	8	8	5	2	1	0	C
Integration         Image	5f	Total		65 65	5 64	61	59	44	38	28	24	19	14	8	2	1	0	- 20
Units paid:																		
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68         Model /         0        0        0         0 <td></td> <td>Units paid:</td> <td></td>		Units paid:																
bit         Model //         Image: Construction of the construct	6a	Model I		0 (	0 0	0	0	0	0	0	0	0	0	0	0	0	0	C
6c         Mode/ III         0         0         0         7         2         0         0         2         2         3         3         1         0           6d         Mode/ V         0	6b	Model II		0 (	0 0	0	1	1	0	0	0	2	2	2	2	0	0	10
def         Model IV         0         0         0         0         0         0         1         2         1         1           def         Model IV         0         0         0         0         1         1         0         1	6c	Model III		0 (	0 0	0	0	7	2	0	0	2	2	3	3	1	0	20
6e         Model V         0         0         0         0         0         0         0         0         1         1         0         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         0         1         1         1         0         1         1         1         0         1         1         1         1        1         1         1 </td <td>6d</td> <td>Model IV</td> <td></td> <td>0 (</td> <td>0 0</td> <td>0</td> <td>0</td> <td>5</td> <td>5</td> <td>5</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>2</td> <td>1</td> <td>1</td> <td>20</td>	6d	Model IV		0 (	0 0	0	0	5	5	5	0	0	0	1	2	1	1	20
of         Total         O <td>6e</td> <td>Model V</td> <td></td> <td>0 0</td> <td>0 0</td> <td>0</td> <td>0</td> <td>5</td> <td>0</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> <td>1</td> <td>1</td> <td>3</td> <td>3</td> <td>15</td>	6e	Model V		0 0	0 0	0	0	5	0	0	1	1	0	1	1	3	3	15
Inits paid - curvalative:         Image of the second	6f	Total		0 (	0 0	0	1	18	7	5	1	5	4	7	8	5	4	65
Units paid-cumulative:         Interpretation         Interpretation <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>																		
Ta         Model I         0        0        0         0 <td></td> <td>Units paid - cumulative:</td> <td></td>		Units paid - cumulative:																
To       Model II       0       0       0       0       0       1       2       2       2       2       4       6       8       10       10       10         Td       Model IV       0       0       0       0       0       0       0       0       5       5       5       6       7       7       8       9       12       15         Td       Model IV       0       0       0       0       0       0       0       5       5       5       6       7       7       8       9       12       15       15         Td       Inde       0       0       0       0       1       19       22       33       32       33       44       48       9       12       15         Td       Inde       10       0       0       1       19       28       13       12       13       13       14       14       14       14       14       14       14       14       14       14       14       14       14       14       15       15       15       15       15       15       15       15       15	7a	Model I		0 (	0 0	0	0	0	0	0	0	0	0	0	0	0	0	C
Tc       Model II       11       13       16       19       20       20         7C       Model V       0 </td <td>7b</td> <td>Model II</td> <td></td> <td>0 (</td> <td>0 0</td> <td>0</td> <td>1</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>4</td> <td>6</td> <td>8</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td>	7b	Model II		0 (	0 0	0	1	2	2	2	2	4	6	8	10	10	10	10
7d       Model /V       0	7c	Model III		0 (	0 0	0	0	7	9	9	9	11	13	16	19	20	20	20
Te       Model V       0       0       0       0       0       0       0       5       5       6       7       7       8       9       12       15         T       Total       0       0       0       0       0       1       19       26       33       32       37       41       48       56       66       66         A werage current sale price (per unit):       0       0       74       0	7d	Model IV		0 (	0 0	0	0	5	10	15	15	15	15	16	18	19	20	20
77       Total       0       0       0       0       1       19       26       31       32       37       41       48       66       66       66       66       66         Average current sale price (per unit):       0 <td>7e</td> <td>Model V</td> <td></td> <td>0 (</td> <td>0 0</td> <td>0</td> <td>0</td> <td>5</td> <td>5</td> <td>5</td> <td>6</td> <td>7</td> <td>7</td> <td>8</td> <td>9</td> <td>12</td> <td>15</td> <td>15</td>	7e	Model V		0 (	0 0	0	0	5	5	5	6	7	7	8	9	12	15	15
Average current sale price (per unit):         Average current sale price (per sq. meter):         Average current sale price (per sq. meter): <t< td=""><td>7f</td><td>Total</td><td></td><td>0 (</td><td>0 0</td><td>0</td><td>1</td><td>19</td><td>26</td><td>31</td><td>32</td><td>37</td><td>41</td><td>48</td><td>56</td><td>61</td><td>65</td><td>65</td></t<>	7f	Total		0 (	0 0	0	1	19	26	31	32	37	41	48	56	61	65	65
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Average current sale price (per unit):         C																		
Ba       Model //       99 300       99 300       99 300       99 900       99 900       10 9090       112 000       85         Bb       Model //       99 300       99 300       99 300       99 300       99 300       99 300       99 300       99 300       99 300       99 300       99 300       118 450       117 312       118 456       107 300       118 456       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 300       118 450       107 350       118 450       107 350       118 450       107 350       118 450       107 350       118 450       107 350       118 450       107 350       118 450       107 350       118 450       107 350       118 450       107 350       118 450       115 300       116 550       157 505       158 540       157 505       158 540       157 505       158 540       157 505       158 540       157 505       158 540       1		Average current sale price (per unit):																
Bb       Model II       0       0000       083.636       86773       89.909       93.045       99.182       102.455       115.595       117.636       111.500       117.312       111.448       10         Bc       Model II       94.500       94.500       116.200       110.201       120.90       116.921       120.273       123.985       127.636       131.18       135.000       135.540       137.95       118.666       137.95         Bc       Model IV       115.000       117.200       116.200       120.400       124.600       132.800       137.200       114.400       144.600       149.800       155.40       155.40       157.955       158.666       137.85         Be       Model V       115.500       116.200       116.000       116.000       116.000       116.000       117.12       118.64       117.12       118.64       115.500       115.550       117.35       118.66       117.31       114.401       141.401       112.217.8       122.178       122.945       188.223       193.500       115.550       119.630       116.150       122.178       122.178       122.076       122.178       122.076       122.070       22.000       22.200       22.200       22.200       22.200	8a	Model I	69	300 72 000	74 700	77 400	80 100	82 800	85 500	88 200	90 900	93 600	96 300	99 000	99 990	100 990	102 000	87 519
Bc       Model III       Model III       Model III       Model IV       Model III       Model IV       Model III       Model IV       Model IIII       Model IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	8b	Model II	80	500 83 636	6 86 773	89 909	93 045	96 182	99 318	102 455	105 591	108 727	111 864	115 000	116 150	117 312	118 485	101 663
Bd       Model IV       107 800       112 000       116 200       124 600       133 000       137 200       141 400       145 600       154 900       155 400       157 095       158 666       137         Be       Model V       133 640       140 727       146 005       151 282       156 559       161 836       167 114       177 2031       177 666       182 945       188 223       193 500       195 435       197 389       199 302       177 766       182 945       133 752       137 611       144 469       144 288       114 437 14       145 755       128 44       133 752       137 611       114 469       144 288       114 437 14       147 756       128 945       133 752       137 611       114 469       144 288       144 312       144 317 231       137 610       128 894       133 752       137 611       114 459       144 288       144 312       141 450       145 560       141 450       141 450 <t< td=""><td>8c</td><td>Model III</td><td>94</td><td>500 98 182</td><td>2 101 864</td><td>105 545</td><td>109 227</td><td>112 909</td><td>116 591</td><td>120 273</td><td>123 955</td><td>127 636</td><td>131 318</td><td>135 000</td><td>136 350</td><td>137 714</td><td>139 091</td><td>119 344</td></t<>	8c	Model III	94	500 98 182	2 101 864	105 545	109 227	112 909	116 591	120 273	123 955	127 636	131 318	135 000	136 350	137 714	139 091	119 344
Be       Model V       135 450       140 727       146 005       151 282       165 559       161 836       167 114       177 391       177 668       182 945       188 223       193 500       195 435       197 389       199 363       177         8f       Average       0       99 028       100 785       110 603       114 461       118 319       122 78       126 08       129 84       137 52       137 611       114 463       142 83       142 77       127       128       128 08       129 84       129 84       137 52       137 611       114 463       142 83       142 77       128       128 08       129 84       129 84       129 84       129 84       128 08       149 284       149 38       142 83       149 38       149 738       128 78       128 98       129 84       129 84       129 84       129 84       129 84       128 84       128 84       149 38       142 83       143 12       147 75       128 74	8d	Model IV	107	300 112 000	116 200	120 400	124 600	128 800	133 000	137 200	141 400	145 600	149 800	154 000	155 540	157 095	158 666	136 140
8f       Average       99 028       102 886       110 603       114 461       118 319       122 178       126 036       129 894       133 752       137 611       141 469       142 883       144 312       144 312       145 755       127         Average current sale price (per sq. meter):       1       1       140 60       1600.00       1600.00       1600.00       1720.00       1780.00       1980.00       1980.00       2020.00       2080.00       2140.00       2222.00       2222.00       2244.22       2266.66       199         9b       Model II       1600.00       1660.00       1780.00       1820.45       1986.36       2040.00       2100.00       2282.00	8e	Model V	135	140 72	7 146 005	151 282	156 559	161 836	167 114	172 391	177 668	182 945	188 223	193 500	195 435	197 389	199 363	171 059
Nerage current sale price (per sq. meter):         Image current sa	8f	Average	99	028 102 886	6 106 745	110 603	114 461	118 319	122 178	126 036	129 894	133 752	137 611	141 469	142 883	144 312	145 755	125 062
Average current sale price (per sq. meter):         C <td></td>																		
9a       Model I       1 600.00       1 600.00       1 780.00       1 780.00       1 900.00       2 020.00       2 020.00       2 100.00       2 222.00       2 244.22       2 226.66       1 9         9b       Model II       1 610.00       1 670.3       1 735.45       1 798.18       1 860.91       1 923.64       2 049.09       2 11.82       2 174.55       2 230.00       2 230.00       2 244.22       2 226.66       1 9         9b       Model II       1 610.00       1 657.00       1 636.36       1 697.73       1 759.09       1 820.45       1 881.82       1 943.18       2 004.55       2 065.91       2 127.27       2 188.64       2 230.00       2 232.00       2 232.02       2 244.22       2 266.66       1 9         9d       Model IV       1 560.00       1 560.00       1 780.00       1 880.02       1 981.82       2 004.55       2 020.00       2 180.00       2 172.50       2 222.00       2 244.22       2 266.66       1 9         9d       Model V       1 560.00       1 560.00       1 780.00       1 780.00       1 900.00       1 960.00       2 020.00       2 030.07       2 103.02       2 133.22       2 244.22       2 266.66       1 9         9e       Model V       1 563.64		Average current sale price (per sq. meter):																
9b       Model II       1610.00       1672.73       1735.45       1798.18       1880.91       1923.64       1986.36       2049.09       2111.82       2174.55       2237.27       2300.00       2323.00       2346.23       2386.89       200         9c       Model II       1575.00       1636.36       1697.73       1735.99       1820.45       1881.82       1943.18       2045.55       2065.91       2127.27       2300.00       2225.00       2295.23       2386.18       198         9d       Model IV       1560.00       1660.00       1720.00       1780.00       1890.00       1990.00       1990.00       2107.00       2400.00       2200.00       2220.00       2220.00       2282.02       2284.22       2286.66       199         9d       Model IV       1505.00       1563.64       1662.27       1680.91       1739.55       1798.18       1885.82       1915.45       1974.09       2032.73       2091.36       2150.00       2171.50       2193.22       2215.15       190         9f       Average       1545.80       1606.03       1666.26       1726.48       1786.71       1886.82       1917.40       2087.84       2148.07       2208.29       2203.38       2252.68       2275.21 <t< td=""><td>9a</td><td>Model I</td><td>1 54</td><td>.00 1 600.00</td><td>1 660.00</td><td>1 720.00</td><td>1 780.00</td><td>1 840.00</td><td>1 900.00</td><td>1 960.00</td><td>2 020.00</td><td>2 080.00</td><td>2 140.00</td><td>2 200.00</td><td>2 222.00</td><td>2 244.22</td><td>2 266.66</td><td>1 944.86</td></t<>	9a	Model I	1 54	.00 1 600.00	1 660.00	1 720.00	1 780.00	1 840.00	1 900.00	1 960.00	2 020.00	2 080.00	2 140.00	2 200.00	2 222.00	2 244.22	2 266.66	1 944.86
9c       Model III       1575.00       1636.36       1697.73       1759.09       1820.45       1943.18       2004.55       2065.91       217.27       2188.64       2250.00       2272.50       2292.23       2318.18       199         9d       Model IV       1540.00       1600.00       1660.00       1720.00       1780.00       1900.00       2020.00       2080.00       2210.00       2272.50       2292.20       2244.22       2266.66       199         9d       Model V       1505.00       1563.64       1622.27       1680.91       1739.55       1798.18       1965.62       1915.45       1974.09       2032.73       2091.36       2150.00       2171.50       2193.22       2215.15       199         9f       Average       1545.80       1666.26       1726.48       1786.71       1846.94       1907.16       1967.39       2087.84       2148.07       2208.29       2203.38       2252.68       2275.21       199         9f       Average       1545.80       1666.26       1726.48       1786.71       1846.94       1907.16       1967.39       2087.84       2148.07       2 208.29       2 203.38       2 252.68       2 275.21       199         10       Cost of construction (per 1 sq.	9b	Model II	1 61	.00 1 672.73	3 1 735.45	1 798.18	1 860.91	1 923.64	1 986.36	2 049.09	2 111.82	2 174.55	2 237.27	2 300.00	2 323.00	2 346.23	2 369.69	2 033.26
9d       Model IV       1540.00       1600.00       1720.00       1720.00       1900.00       2900.00       2140.00       2220.00       2244.22       2266.66       19         9e       Model V       1505.00       1563.64       1622.27       1680.91       1739.55       1788.18       1856.82       1915.45       1974.90       2032.73       208.20       2210.00       22171.50       2193.22       2215.15       190         9e       Model V       1565.00       1563.64       1622.27       1680.91       1739.55       1798.18       1856.82       1915.45       1974.90       2032.73       208.29       2280.20       2215.05       193.20       2115.25       190       2100.00       2100.	9c	Model III	1 57	.00 1 636.30	6 1 697.73	1 759.09	1 820.45	1 881.82	1 943.18	2 004.55	2 065.91	2 127.27	2 188.64	2 250.00	2 272.50	2 295.23	2 318.18	1 989.06
9e       Model V       1503.00       1563.64       1622.27       1680.91       1739.55       1798.18       1856.82       1974.09       2 032.73       2 091.36       2 150.00       2 171.50       2 193.22       2 215.15       1 91         9f       Average       1545.00       1640.03       1 660.26       1726.48       1786.71       1846.94       1 907.16       1 974.09       2 032.73       2 091.36       2 150.00       2 171.50       2 193.22       2 215.15       1 91         9f       Average       0       1 563.66       1 726.48       1 786.71       1 846.94       1 907.16       1 974.09       2 032.73       2 091.36       2 150.00       2 171.50       2 193.22       2 215.15       1 91         9f       Average       0 <td>9d</td> <td>Model IV</td> <td>1 54</td> <td>.00 1 600.00</td> <td>1 660.00</td> <td>1 720.00</td> <td>1 780.00</td> <td>1 840.00</td> <td>1 900.00</td> <td>1 960.00</td> <td>2 020.00</td> <td>2 080.00</td> <td>2 140.00</td> <td>2 200.00</td> <td>2 222.00</td> <td>2 244.22</td> <td>2 266.66</td> <td>1 944.86</td>	9d	Model IV	1 54	.00 1 600.00	1 660.00	1 720.00	1 780.00	1 840.00	1 900.00	1 960.00	2 020.00	2 080.00	2 140.00	2 200.00	2 222.00	2 244.22	2 266.66	1 944.86
91       Average       1565.00       1606.03       1606.26       1726.48       1786.71       1846.94       1907.16       1967.39       2 027.61       2 087.84       2 148.07       2 208.29       2 230.38       2 252.68       2 275.21       1 90         0<	9e	Model V	1 50	.00 1 563.64	4 1 622.27	1 680.91	1 739.55	1 798.18	1 856.82	1 915.45	1 974.09	2 032.73	2 091.36	2 150.00	2 171.50	2 193.22	2 215.15	1 900.66
Image: Construction (per 1 sq. meter)       I	9f	Average	1 54	.80 1 606.03	3 1 666.26	1 726.48	1 786.71	1 846.94	1 907.16	1 967.39	2 027.61	2 087.84	2 148.07	2 208.29	2 230.38	2 252.68	2 275.21	1 952.19
Image: Note of the system o																		
10       Cost of construction (per 1 sq. meter)       1529 <th1529< th=""> <th1529< th="">       1529&lt;</th1529<></th1529<>																		
	10	Cost of construction (per 1 sq. meter)	1	529 1 529	9 1 529	1 529	1 529	1 529	1 529	1 529	1 529	1 529	1 529	1 529	1 529	1 529	1 529	1 529

Developed by the Urban Institute

### Residential Construction Project and Construction Loan Cashflows Model

USES:         MAD COSTS:         Image: mail of the second	
HABC COSTS:         Image: second	
HARD COSTS:         Image: Hard CostS (CostS)         Image: Hard CostS (CostS)         Image: Hard CostS)	
I         Indiana         Interval         Int	
11         Land         10000         1000         1000	
Image: Control of the second	10.00
Pre-design research, design and recollision:         Solution         Solution <td></td>	
Processing research, design and recordination:         Image: construction part of the series of the construction part of the project of protect of demolating the construction part of the project of protect of the construction part of the project of the protect part of the building and project of protect of the construction part of the project of protect of the construction part of the project of protect part of the protect part of the project of protect part of the protect part of the project of protect part of the protect part of the project of protect part of the protect part of the project of protect part of the protect part of the project of protect part of the protect part of the project of protect part of the protect part of the project of protect part of the protect part of the protect part of the protect part of the protect part of the project of the part of the protect part of the protect part of the protect part of the protect part of the protect part of the part of the part of the part of the protect part of the part of the part of the part of the protect part of the part of the part of the part of the protect part of the part of the part of the part of the part of the protect part of the part of the part of the part of the protect par	
reconciliation:         reconcilia	
Networksite	
12         Condense survey of and plot         3 500         1000 <th< td=""><td></td></th<>	
Image: Second	25
1         Enclassing and percent with         1         Enclassing and percent with         1 <th1< th=""> <th1< th="">         1         &lt;</th1<></th1<>	
Image: matrix of a construction of researching study         S 0.00         I 0000         I 0000 <td>800</td>	800
10         Design of the "U" project         10 000         00000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         0000         00000         0000         00000         <	15 00
16       Receiving of order for denoising works       5 000	10 00
17       Reaching of order for excavaling works       5 000	500
18       Dynamic testing of Numdation       7 100       6 400	5 00
Design of architectural and construction part of the project of water supply line and sewage system in project of water supply system of the building and seven construction works and seven and	13 50
19       project       10 500       9 400       1 000	
20       Project of water supply ine and several operations operatioperations operatioperations operations operati	2090
11       Project of heating system and verifiation system       4 000       4 000       500	900
Project of power supply system of the building and 28 weak-curved power system Recordination of the roy of the alam system Recordination of the roy of th	900
12         Weak-current power system         3 000         4000         500         4000         500         4000         200	
32       Project of fire alarm system       2 000       200	75
141       Reconciliation of the project       2000       10.000       0       0       0         261       Reconciliation       57.100       50.800       4.700       10.000       0 </td <td></td>	
15:         Receiving of permission for construction works         10.00         0         0         0           26         reconciliation         57 100         50 800         4 700         10 000         0	20
Installation         S7 100         50 800         4 700         10 000         0         0         0           26         reconciliation         57 100         50 800         4 700         10 000         0 </td <td>10 00</td>	10 00
26       reconciliation       57 100       50 800       4 700       10 000       0       0       0         26       reconciliation       57 100       50 800       4 700       10 000       0	
Installation of costs:         Image: Control of entrol of entro	
Postrucion costs:         Construction costs:	
Ponstrucion costs:         Image: Construction costs:         Image:	
Ponstrucion costs:         Image: Construction costs:         Image:	
Installation of undation         Image of the preliminary works         Image of the	
General works:         300         3000         2000         1500         500         2           27         Auxiliary outsite communications         3600         3000         2000         1500         1500         2500         2         20         2         2         2         2         2         2         2         300         3000         2         3000         2         2         2         500         4         2         500         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         2         0         2         0         2         2         0         2         0         1         0	
27       Auxiliary outsite communications       3 000       3 000       2 000       1 500       1 500         28       Other preliminary works       1 5000       2 4892       2 500       1 500       1	
11       Auxiliary of any statistications       3000       2000       1000       20000       2000 <td></td>	
20       Unley localization of adaption of a second s	
128       Lease 01 equipment and expendation materials       1 500       1 500       4 500       2 500       1 50	
300       100al.       0       20100       2932       6 500       4 000       2 2000       2         Works on construction site:       0       20100       2932       6 500       4 000       2 2000       2         30       Installation of in-site communication       36       1500       9 500       8 500       1 500       1         32       Installation of in-site communication       0       0       8 1175       24 500       8 500       1 500       1	2 500 2 500 2 500 1 500 1 500 2 500 2 700 2 70 1 500 2 70 10 1 500 2 70 100 2 70 100 2
Works on construction site:         38 cm         38 cm         38 cm           31         Demolishing of ramshackle building         38 cm         35 cm         35 cm         35 cm         36 cm         3	
Writes of construction site         36         1500	
11       Detentionshing of ramshacke building       38 6/5         22       Cleaning of construction site       9500       8 500       1 500       1         33       Installation of in-site communication       9 00       8 1175       24 500       8 500       1 500       1         34       Total:       0       0       81 175       24 500       8 500       1 500       1         35       Excavation works       28 700       68 750       1 2 300       30 000       255 500       74 300       30 000       220 000       100 000       270       100 000       270 000       156 200       150 000       20 000       270 000       100 00	
32       Cleaning of construction site       42 500       15 000       1         33       Installation of in-site communication       9 500       8 500       1 500       1         34       Total:       0       0       81 175       24 500       8 500       1 500       1         35       Excavation works       28 700       68 750       12 300       3000       225 500       74 300         36       Construction of foundation       0       0       0       0       0       168 200       1500       1500       1         37       Installation of exterior walls       50 0000       123 460       49 805	386
33       Installation of in-Site Communication       9500       8 500       1 500       1       1         34       Total:       0       0       81 175       24 500       8 500       1 500       1       1         35       Excavation works       0       0       81 175       24 500       8 500       1 500       1       1         36       Construction of foundation       0       80 000       225 500       74 300       1	5 000 20 000 82 50
34       Iotal:       0       0       81175       24 500       8 500       1 500       1 500       1         35       Excavation works       28 700       68 750       12 300       80 000       225 500       74 300         36       Construction of basement walls       50 000       123 460       49 805       10 80 000       220 000       10 80 000       220 000       120 460       49 805       10 80 000       220 000       10 000       2270       10 80 000       220 000       190 000       270       10 80 000       220 000       190 000       275       16 80 000       220 000       190 000       275       190 000       275       130 100       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       275       10 000       10 000       10 000       10 000       10 000       10 000       10 000       10 000       10 000       10 000       10 000 <td>000 1 000 1 000 1 000 1 500 500 27 0</td>	000 1 000 1 000 1 000 1 500 500 27 0
SE         Excavation works         28 root         68 r50         12 300         80 000         255 500         74 300         90 000         255 500         74 300         90 000         255 500         74 300         90 000         225 500         74 300         90 000         225 500         74 300         90 000         225 500         74 300         90 000         225 500         74 300         90 000         225 500         74 300         90 000         225 500         74 300         90 000         227 00         150 000         90 000         227 00         150 000         220 000	000 1 000 1 000 1 000 6 500 20 500 0 0 0 148 1
36       Excavation works       28 700       68 750       12 300         36       Construction of foundation       80 000       255 500       74 300         37       Installation of basement walls       0       0       123 460       49 805         38       Erection of exterior walls and partitions       76 500       156 200       150         38       Erection of interior walls and partitions       76 500       156 200       150         40       Installation of ceilings and covers       20 000       190 000       220 000       270         41       Installation of noting       20 000       190 000       225 570       28 380       57         43       Installation of windows       28 380       57       49       28 380       57         44       Construction of staircases and landings       46       49       40       40       40         45       Construction of staircases and landings       46       40       40       40       40         46       Installation of polony fencing       40       40       40       40       40         47       Plastering of interior walls       40       40       40       40       40         48 <t< td=""><td></td></t<>	
36       Construction of foundation       80 000       255 500       74 300         37       Installation of basement walls       50 000       123 460       49 805        0       50 000       200 00       220 000       220 000       270         38       Erection of interior walls and partitions       60 000       220 000       270       20 000       275         41       Installation of cooling       20 000       190 000       275       41       Installation of doors       49         42       Installation of entrances       28 380       57       49       40       49       40       49       49       49       44       49       46       10       40       49       49	10975
37       Installation of basement walls       50 000       123 460       49 805         38       Erection of exterior walls       76 500       156 200       150         39       Erection of interior walls and partitions       60 000       220 000       270         40       Installation of collings and covers       20 000       190 000       275         41       Installation of ofoling       28 380       57         42       Installation of balcony fencing       28 380       57         43       Construction of staircases and landings       28 380       57         44       Construction of staircases and landings       28 380       57         45       Construction of staircases and landings       15       28 380       57         46       Installation of folors in apartments       28 380       57       50       156         47       Plastering of interior walls       15       15       15       15         48       Preparation of grounding for floors in apartments       20       20       20       20         50       Carpeting       50       Carpeting       50       20       20       20         51       Tiling works       50       Carpeting <td< td=""><td>40980</td></td<>	40980
Image: state of the s	
38       Erection of exterior walls and partitions       150       150       150         39       Erection of interior walls and partitions       60 000       220 000       270         40       Installation of coilings and covers       20 000       270       190 000       275         41       Installation of vindows       20 000       190 000       275         42       Installation of orofing       49       49         43       Installation of staircases and landings       49         44       Construction of entrances       28 380       57         45       Construction of staircases and landings       46       1nstallation of colors in apartments       49         46       Installation of of oros in apartments       49       40       15       47       Plastering of interior walls       45       45       45       45       45       45       45       47       Plastering of interior walls       49       45       47       Plastering of interior walls       45 <td></td>	
39       Erection of interior walls and partitions       60 000       220 000       270         40       Installation of ceilings and covers       20 000       190 000       275         41       Installation of roofing       20 000       190 000       275         42       Installation of roofing       49       28 380       57         43       Installation of balcony fencing       28 380       57         44       Construction of entrances       28 380       57         45       Construction of staircases and landings       46       47       Plastering of interior walls       47         47       Plastering of interior walls       49       47       Plastering of interior walls       40       40         48       Preparation of grounding for floors in apartments       49       49       47       Plastering of interior walls       40       40         49       Parquet-floor works       50       Carpeting       50       Carpeting       50       50         50       Carpeting       51       Tiling works       50       50       50       50       50       50       50       50       50       50       50       50       50       50       50       50	000 120 000 45 100 547 80
40       Installation of ceilings and covers       20 000       190 000       275         41       Installation of voindows       49         42       Installation of voindows       28 380       57         43       Installation of oors       28 380       57         44       Construction of entrances       28 380       57         45       Construction of staircases and landings       46       49         46       Installation of voindows       100       100       100         47       Plastering of interior walls       49       49       45         48       Preparation of grounding for floors in apartments       50       50       50       50         49       Parquet-floor works       50       50       50       50       50         51       Tilling works       50	000 290 000 200 000 24 000 1 064 00
11       Installation of roofing       49         42       Installation of doors       28 380       57         44       Construction of entrances       28 380       57         45       Construction of staircases and landings       6       1nstallation of doors       28 380       57         46       Installation of balcony fencing       6	600 <u>215 400</u> 701 00
42       Installation of windows       49         43       Installation of doors       28 380       57         44       Construction of entrances       57         45       Construction of staircases and landings       57         46       Installation of balcony fencing       57         47       Plastering of interior walls       6       6         48       Preparation of grounding for floors in apartments       49       75         49       Parquet-floor works       50       6       6       50         50       Carpeting       57       50       57       50       57         51       Tilling works       50       57       50       57       50       57         52       Painting works       50       57       50       57       50       57         53       Wallpaper       57       50       57       50       57       50       57         54       Total:       0       0       0       0       0       0       0         54       Total:       0       0       0       0       0       0       0       0       0       0       0       35	<u>25 000</u> <u>230 800</u> <u>47 300</u> <u>303 10</u>
43       Installation of doors       28 380       57         44       Construction of entrances       57         45       Construction of staircases and landings       46         46       Installation of balcony fencing       6       6         47       Plastering of interior walls       6       6       6         48       Preparation of grounding for floors in apartments       15       15       15         49       Parquet-floor works       50       Carpeting       50       20         51       Tilling works       51       20       20       20         52       Painting works       50       0       0       0       0       0       35         53       Wallpaper       51       50       0       0       0       0       0       35	500         76 400         95 300         58 020         55 000         20 000         354 22
44       Construction of entrances         45       Construction of staircases and landings         46       Installation of balcony fencing         46       Installation of balcony fencing         47       Plastering of interior walls         49       Parquet-floor works         50       Carpeting         51       Tilling works         52       Painting works         53       Wallpaper         54       Total:       0       0       0       0       0       0	500 48 684 47 984 35 616 30 935 249 0
45       Construction of staircases and landings         46       Installation of balcony fencing         47       Plastering of interior walls         48       Preparation of grounding for floors in apartments         49       Parquet-floor works         50       Carpeting         51       Tilling works         53       Wallpaper         54       Total:         0       0       0       0       0	<u>10 000 59 382 15 600 3 465</u> 88 4
46       Installation of balcony fencing         47       Plastering of interior walls         48       Preparation of grounding for floors in apartments         49       Parquet-floor works         50       Carpeting         51       Tilling works         52       Painting works         53       Wallpaper         54       Total:         0       0       0       0       0	32 312 35 685 12 506 15 903 96 40
Finishing works:       1       1       15         47       Plastering of interior walls       15         48       Preparation of grounding for floors in apartments       15         49       Parquet-floor works       20         50       Carpeting       20         51       Tilling works       20         53       Wallpaper       20         54       Total:       0       0       0       0       0	2 000 7 500 7 500 7 500 3 500 28 00
Finishing works:       1       1       15         47       Plastering of interior walls       15         48       Preparation of grounding for floors in apartments       15         49       Parquet-floor works       50         50       Carpeting       20         51       Tilling works       20         52       Painting works       50         53       Wallpaper       0       0       0       0       0         54       Total:       0       0       0       0       0       35	
47       Plastering of interior walls       15         48       Preparation of grounding for floors in apartments       15         49       Parquet-floor works       20         50       Carpeting       20         51       Tilling works       20         53       Wallpaper       20         54       Total:       0       0       0       0       0       35	
48       Preparation of grounding for floors in apartments         49       Parquet-floor works         50       Carpeting         51       Tilling works         52       Painting works         53       Wallpaper         54       Total:         0       0       0       0	000 40 000 35 000 25 000 20 000 135 00 135 00
49       Parquet-floor works       20         50       Carpeting       20         51       Tilling works       20         52       Painting works       20         53       Wallpaper       54         54       Total:       0       0       0       0       0       35	15 000 11 000 11 000 9 000 46 00
50     Carpeting     20       51     Tiling works     20       52     Painting works     53       53     Wallpaper     54       54     Total:     0     0     0     0     0	40,000 55,000 30,000 125,00
Starp works         20           51 Tilling works         52 Painting works           53 Wallpaper         0         0         0         0         0         35           54 Total:         0         0         0         0         0         35	20 000 20 000 40 00
Step Painting works         20           53         Wallpaper           54         Total:	
53         Wallpaper           54         Total:         0         0         0         0         0         35	24 000 58 000 58 000 43 000 43 000 19900 1990
54         Total:         0         0         0         0         0         0         35	18.000 40.000 30.000 4.000 21.000 20.0000 20.0000 20.000 20.000 20.000 20.000 20.000 2
Developed by the Urban Institute	

	Special works:																	
	Interior and exterior works on installation of water																	
55	supply line and sewage system				15 000	20 000	30 000	40 000	30 000	20 000	20 000	30 000	23 000					228 000
56	Interior and exterior works on power supply system				6 000	17 000	25 000	33 000	40 000	40 000	35 000	30 000	25 000	15 000				266 000
57	Installation of weak-current power system							2 000	2 500	15 000	10 000	4 000	4 000	2 000				39 500
	Installation of centralized heating system and																	
58	ventilation system				40 000	70 000	120 000	100 000	60 000	50 000	40 000	20 000	20 000					520 000
59	Works on installation of gas pipe line					35 000	20 000	55 000	29 000	34 000	20 000	40 000	50 000	50 000				333 000
60	Installation of fire alarm system									5 000	5 000	4 000	5 000					19 000
61	Total:	0	0	0	61 000	142 000	195 000	230 000	161 500	164 000	130 000	128 000	127 000	67 000	0	0	0	1 405 500
62	Finishing of facade:	1				· ·				· ·	5 000	10 000	15 000	8 000				38 000
63	Accomplishment	1									10 000	15 000		25 000				50 000
64	Trash cans and other items	1												25 000				25 000
														Γ				
65	Other works and expenses												60 000	50 000				110 000
66	Total - construction works:	0	20 100	139 267	240 750	472 300	554 760	878 385	1 002 600	1 058 984	988 496	647 703	540 041	338 668	0	0	0	6 882 054
	General Contractor's activity:																	
67	Different fees and payments		7 000	5 000	5 000													17 000
68	Supervising		1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000				12 000
69	Overhead costs		1 500	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1 500				18 000
70	Total - General Contractor's activity:	0	9 500	7 500	7 500	2 500	2 500	2 500	2 500	2 500	2 500	2 500	2 500	2 500				47 000
71	Unexpected costs (5% of total main costs)	3 355	4 020	7 573	12 913	23 740	27 863	44 044	50 255	53 074	49 550	32 510	27 127	17 058	0	0	0	353 083
72	TOTAL HARD COSTS	70 455	84 420	159 040	271 163	498 540	585 123	924 929	1 055 355	1 114 558	1 040 546	682 713	569 668	358 226	0	0	0	7 414 737
73	Total hard costs - %	0.95%	1.14%	2.14%	3.66%	6.72%	7.89%	12.47%	14.23%	15.03%	14.03%	9.21%	7.68%	4.83%	0.00%	0.00%	0.00%	100.00%
74	Total hard costs - cumulative	70 455	154 875	313 915	585 078	1 083 618	1 668 741	2 593 670	3 649 025	4 763 583	5 804 129	6 486 842	7 056 510	7 414 737	7 414 737	7 414 737	7 414 737	7 414 737
75	Total hard costs - %, cumulative	0.95%	2.09%	4.23%	7.89%	14.61%	22.51%	34.98%	49.21%	64.24%	78.28%	87.49%	95.17%	100.00%	100.00%	100.00%	100.00%	100.00%

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	SOFT COSTS:																	
																		-
76	General costs:																	-
77	Interest on the loan		0	0	0	269	11 936	35 541	23 873	0	6 803	33 461	58 355	65 883	52 330	18 144	0	306 595
78	Construction loan fee		30 000															30 000
79	Expenses for loan transaction closing:																	-
80	Legal consulting	2 000	5 000														,	7 000
81	Registration fees		3 500															3 500
82	Other expenses		5 500															5 500
83	Total:	2 000	14 000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16 000
84	Marketing:																	
85	Advertising		1 000	1 500	1 500	1 500	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000			23 500
86	Printed materials										1 000							1 000
87	Sales agents		0	0	0	0	0	10 089	3 325	13 519	3 325	3 430	0	1 643	2 437	2 629	3 433	43 829
88	Total:	0	1 000	1 500	1 500	1 500	2 000	12 089	5 325	15 519	6 325	5 430	2 000	3 643	4 437	2 629	3 433	68 329
89	Other expenses of Developer																	(
90	TOTAL SOFT COSTS	2 000	45 000	1 500	1 500	1 769	13 936	47 629	29 198	15 519	13 128	38 891	60 355	69 526	56 767	20 774	3 433	420 925

91 TOTAL 92 Total us 93 Total us 94 Total us CASH	L USES	72 455 0.92% 72 455 0.92% 72 455	129 420 1.65% 201 875 2.58%	160 540 2.05% 362 415 4.63%	272 663 3.48% 635 078 8.10%	500 309 6.39% 1 135 386 14.49%	599 059 7.65% 1 734 446 22.14%	972 559 12.41% 2 707 004 34.55%	1 084 553 13.84% 3 791 557 48.39%	1 130 077 14.42% 4 921 634 62.81%	1 053 674 13.45% 5 975 308 76.26%	721 604 9.21% 6 696 912 85.47%	630 023 8.04% 7 326 935 93.51%	427 752 5.46% 7 754 687 98.97%	56 767 0.72% 7 811 454 99.69%	20 774 0.27% 7 832 228 99.96%	3 433 0.04% 7 835 661 100.00%	7 835 66 100.00% 7 835 66 100.00%
92 Total us 93 Total us 94 Total us CASH	Jses - % Jses - cumulative Jses - %, cumulative H SOURCES:	0.92% 72 455 0.92% 72 455	1.65% 201 875 2.58%	2.05% 362 415 4.63%	3.48% 635 078 8.10%	6.39% 1 135 386 14.49%	7.65% 1 734 446 22.14%	12.41% 2 707 004 34.55%	13.84% 3 791 557 48.39%	14.42% 4 921 634 62.81%	13.45% 5 975 308 76.26%	9.21% 6 696 912 85.47%	8.04% 7 326 935 93.51%	5.46% 7 754 687 98.97%	0.72% 7 811 454 99.69%	0.27% 7 832 228 99.96%	0.04% 7 835 661 100.00%	100.00% 7 835 661 100.00%
92 Total us 93 Total us 94 Total us CASH	Jses - % Jses - cumulative Jses - %, cumulative H SOURCES: - cumulative - cumulative	0.92% 72 455 0.92% 72 455	1.65% 201 875 2.58%	2.05% 362 415 4.63%	3.48% 635 078 8.10%	6.39% 1 135 386 14.49%	7.65% 1 734 446 22.14%	12.41% 2 707 004 34.55%	13.84% 3 791 557 48.39%	14.42% 4 921 634 62.81%	13.45% 5 975 308 76.26%	9.21% 6 696 912 85.47%	8.04% 7 326 935 93.51%	5.46% 7 754 687 98.97%	0.72% 7 811 454 99.69%	0.27% 7 832 228 99.96%	0.04% 7 835 661 100.00%	100.00% 7 835 661 100.00%
93 Total us 94 Total us CASH	Jses - cumulative Jses - %, cumulative H SOURCES: - cumulative - cumulative	72 455 0.92% 72 455	201 875 2.58%	362 415 4.63%	635 078 8.10%	1 135 386 14.49%	1 734 446 22.14%	2 707 004 34.55%	3 791 557 48.39%	4 921 634 62.81%	5 975 308 76.26%	6 696 912 85.47%	7 326 935 93.51%	7 754 687 98.97%	7 811 454 99.69%	7 832 228 99.96%	7 835 661 100.00%	7 835 661 100.00%
94 Total us CASH	uses - %, cumulative	0.92%	2.58%	4.63%	8.10%	14.49%	22.14%	34.55%	48.39%	62.81%	76.26%	85.47%	93.51%	98.97%	99.69%	99.96%	100.00%	100.00%
CASH	H SOURCES:	72 455																
CASH	H SOURCES:	72 455																
CASH	+ SOURCES:	72 455																
05 Equity	- cumulative	72 455																
05 Equity	- cumulative	72 455																
95 Equity	- cumulative		129 420	160 540	237 585	0	0	0	0	0	0	0	0	0	0	0	0	600 000
96 Equity -	available	72 455	201 875	362 415	600 000	600 000	600 000	600 000	600 000	600 000	600 000	600 000	600 000	600 000	600 000	600 000	600 000	600 000
97 Equity a	available	527 545	398 125	237 585	0	0	0	0	0	0	0	0	0	0	0	0	0	(
98a Proceed	eds of units sales (prepayments)		0	0	26 032	116 332	155 836	65 536	50 134	235 488	323 081	323 225	376 347	393 649	366 723	163 923	0	2 596 30
98b Proceed	eds of units sales (final payments)		0	0	0	0	34 709	2 138 127	752 382	686 000	66 845	247 138	183 636	575 831	741 790	467 789	417 927	6 312 176
98c Total pr	proceeds of units sales		0	0	26 032	116 332	190 545	2 203 664	802 516	921 488	389 926	570 364	559 984	969 480	1 108 513	631 712	417 927	8 908 483
99 Transfe	er costs (-)		0	0	0	0	2 603	69 562	26 504	20 580	5 013	18 535	13 773	28 405	33 705	26 202	22 373	267 254
100 Net pro	oceeds of units sales (=)		0	0	26 032	116 332	187 942	2 134 102	776 012	900 908	384 913	551 828	546 211	941 075	1 074 809	605 511	395 554	8 641 229
101 NPV of	of net proceeds of units sales		0	0	23 139	97 964	150 354	1 625 982	564 373	626 718	256 609	353 170	336 130	557 674	614 176	334 075	210 962	5 751 326
102 TOTAL	L CASH SOURCES (before loan)	72 455	129 420	160 540	263 616	116 332	187 942	2 134 102	776 012	900 908	384 913	551 828	546 211	941 075	1 074 809	605 511	395 554	9 241 229
	· · · ·																	
103 Prior pr	project balance		0	0	0	- 9046	- 393 023	- 804 140	357 403	48 863	- 180 306	- 849 068	- 1 018 843	- 1 102 655	- 589 332	428 710	1 013 447	(
104 Net infle	flows (before loan)	72 455	129 420	160 540	263 616	116 332	187 942	2 134 102	776 012	900 908	384 913	551 828	546 211	941 075	1 074 809	605 511	395 554	9 241 229
105 Total us	uses	72 455	129 420	160 540	272 663	500 309	599 059	972 559	1 084 553	1 130 077	1 053 674	721 604	630 023	427 752	56 767	20 774	3 433	7 835 66
106 Ending	g project balance (before loan)	0	0	0	- 9 046	- 393 023	- 804 140	357 403	48 863	- 180 306	- 849 068	- 1 018 843	- 1 102 655	- 589 332	428 710	1 013 447	1 405 567	1 405 567
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107	7 Loan proceeds to borrower (calculated)	0	0	0	9 046	383 977	411 117	0	0	229 169	668 761	169 776	83 812	0	0	0	0	1 955 658
	Borrower's equity for temporary financing of the project																	
108	B (with repayment at the end of the month)	0	0	0	9 046	383 977	411 117	0	0	229 169	668 761	169 776	83 812	0	0	0	0	1 955 658
	Repayment of the borrower's equity for temporary																	
109	9 financing of the loan (from the loan)	0	0	0	8 594	364 778	390 561	0	0	217 711	635 323	161 287	79 621	0	0	0	0	1 857 875
110	0 Retainages (5%)	0	0	0	452	19 199	20 556	0	0	11 458	33 438	8 489	4 191	0	0	0	0	97 783
111	1 Transfer of retainages to the borrower		0	0	0	0	0	40 207	0	0	0	0	0	0	57 576	0	0	97 783
112	2 Retainages (cumulative)	0	0	0	452	19 651	40 207	0	0	11 458	44 897	53 385	57 576	57 576	0	0	0	0
113	3 Adjusted equity to finance the project	72 455	129 420	160 540	238 037	19 199	20 556	0	0	11 458	33 438	8 489	4 191	0	0	0	0	697 783
114	4 Adjusted equity to finance the project - cumulative	72 455	201 875	362 415	600 452	619 651	640 207	600 000	600 000	611 458	644 897	653 385	657 576	657 576	600 000	600 000	600 000	600 000
115	5 Loan proceeds to borrower	0	0	0	8 594	364 778	390 561	0	0	217 711	635 323	161 287	79 621	0	0	0	0	1 857 875
116	6 Loan repayment	0	0	0	0	0	0	763 933	0	0	0	0	0	513 323	580 619	0	0	1 857 875
117	7 Borrower's debt - cumulative	0	0	0	8 594	373 372	763 933	0	0	217 711	853 034	1 014 321	1 093 942	580 619	0	0	0	0
118	8 Net cash flows to the project	0	0	0	0	0	0	397 610	- 308 541	0	0	0	0	0	437 423	584 737	392 121	1 503 350
119	9 NPV of net cash flows to the project		0	0	0	0	0	302 941	- 224 393	0	0	0	0	0	249 956	322 613	209 131	860 248
120	0 Net cash flows to borrower	- 72 455	- 129 420	- 160 540	- 238 037	- 19 199	- 20 556	397 610	- 308 541	- 11 458	- 33 438	- 8 489	- 4191	0	437 423	584 737	392 121	805 567
121	1 NPV of net cash flows to borrower	- 72 455	- 129 420	- 151 097	- 211 588	- 16 167	- 16 445	302 941	- 224 393	- 7971	- 22 292	- 5433	- 2579	0	249 956	322 613	209 131	224 801
122	2 Interest rate (per year)		75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	
123	3 Interest rate (per month)		6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	
124	4 Borrower's equity	600 000																
125	5 Borrower's net income	805 567																
126	6 Peak loan	1 093 942																
127	7 % coverage	0.74																

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