



**Vadim Dyckman**  
**Promstroikontrakt Group**  
**CFO**

**EMBA Stockholm School of  
Economics**

**[www.financegu.ru](http://www.financegu.ru)**

**[vdyckman@financegu.ru](mailto:vdyckman@financegu.ru)**

## Game Target

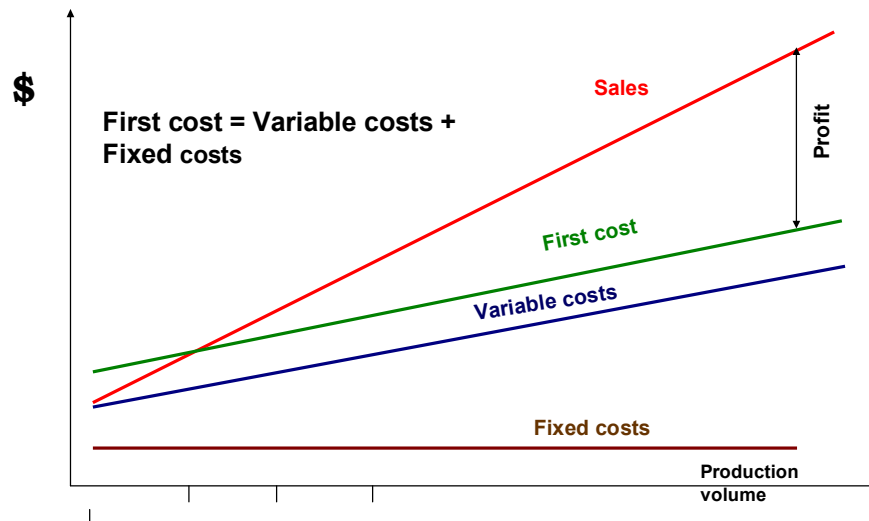
**To polish in practice knowledge and skills acquired during education**

- ❖ How to earn a profit?
- ❖ How to convert profit into cash?
- ❖ Fixed and variable expenditures: what is more important ?
- ❖ How to choose products to produce?
- ❖ How to calculate amount of financing ?

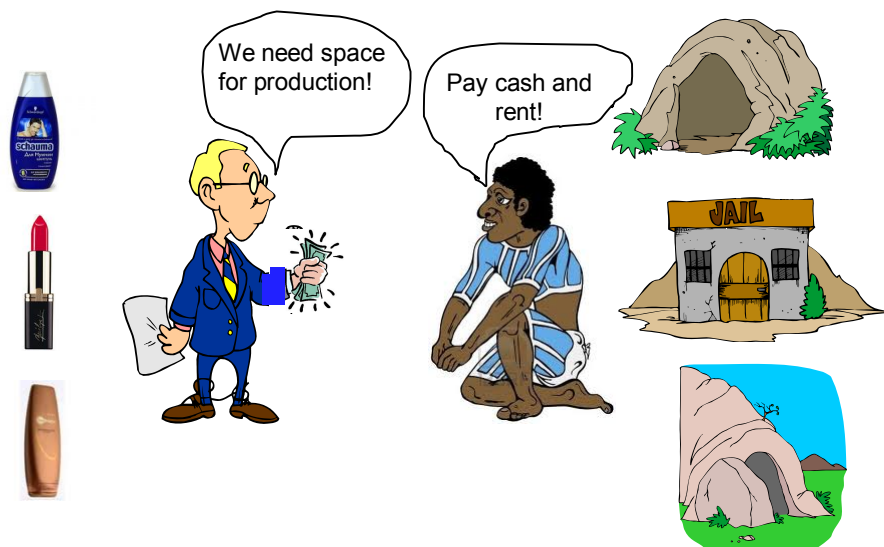
## Terms

- **Operational profitability** – operational profit to sales ratio
- **Cash flow** – difference between cash income and outcome
- **Operational cash flow**– difference between cash income and outcome from operational activity
- **Variable expenditures** – those that respond directly and proportionately to changes in activity level or volume
- **Fixed expenditures** – those that do not fluctuate with changes in production activity level or sales volume
- **Овердрафт** – like a 'safety net' on your current account; bank allows you to borrow up when there's no money in your account and can be useful to cover short term cash flow problems (but overdraft interest, as a rule, is higher than normal loan interest)

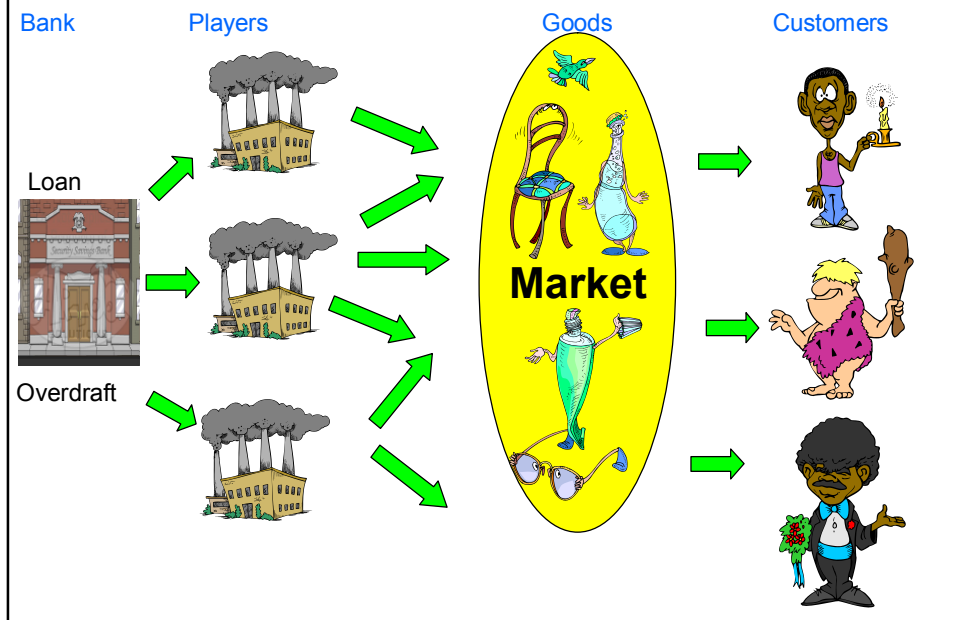
## Economy of scale



## Kings of cosmetics. Expansion into Africa!



## Game environment



## Products

	Lipstick	Shampoo	Cream	Lotion	Perfume
<b>Variable costs, Rub/unit.</b>	120	90	120	150	180
<b>Fixed costs, Rub</b>	4000	8000	2000	3000	1000
<b>Budget price, Rub/unit. (100)</b>	210	230	200	250	265
<b>Profit per unit. (100 units)</b>	50	60	60	70	75
<b>Profitability oper. %</b>	23,8%	26,1%	30,0%	28,0%	28,3%

## Players

	Shinel	Victoria	Nika	Dubua	Ostap & Co
Capacity	100	100	100	100	100



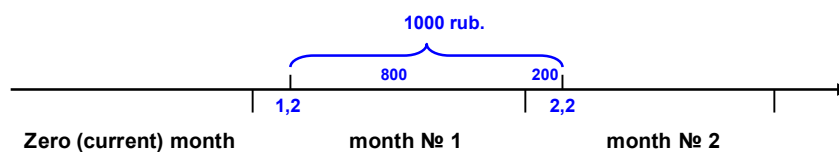
## Customers

Products/Customers	X	Y	Z	T
Lipstick	100%			
Shampoo		100%		
Cream			100%	
Lotion				100%
Perfume				100%
Payment period, months	1,5	0,5	1,2	0,2
<b>Reliability</b>	<b>60%</b>	<b>50%</b>	<b>80%</b>	<b>40%</b>

## Payment calculation

**Example:**

**Customer Z should pay 1000 rubles in 1,2 monthes**



## Bank

Loan interest rate - 5% in a month

Overdraft interest rate - 10% in a month

Loan amount is not limited, should be declared before the beginning of the month.

Overdraft is given out automatically to cover shortage of working capital

## Example of completed form

Form

Company name

Shinel

month

0

Products

Production volume

Lipstick

Shampoo

Cream

Lotion

Perfume

Total

50

50

100

Loan

25500

## Company report

Month 0

Rassvet

Production volume

Lipstick

0

Shampoo

0

Cream

25

Lotion

50

Perfume

50

**TOTAL**

**125**

Cash balance in the beginning

0

Loan requested

25 500

**P&L Report**

Sales

29 900

Expenditures

25 500

Operational profit

4 400

Profitability operational

14,7%

Finance expenditures

1 403

**Net earning**

**2 998**

### CASH FLOW REPORT

Cash balance in the beginning

0

Loan receipt

25 500

Cash income from sales

0

**Total cash in**

**25 500**

Cash out for production

25 500

Interest

1 275

Balance

-1 275

Overdraft

1 275

Overdraft interest

128

**Total cash balance**

**-128**

Loan debt (-)

26 775

Future cash in (+) total

29 900

Future cash in (+) month 1

21 425

Future cash in (+) month 2

8 475

Future cash in (+) month 3

0

**Interim result**

**2 998**

## Competitors report

Production volume, units	0	0	25	50	50	
<b>Zakat</b>	<b>Lipstick</b>	<b>Shampoo</b>	<b>Cream</b>	<b>Lotion</b>	<b>Perfume</b>	<b>Total</b>
Actual price, Rub/unit.	227	249	198	242	257	
<b>Sales, rub.</b>	<b>0</b>	<b>0</b>	<b>4950</b>	<b>12100</b>	<b>12850</b>	<b>29900</b>
<i>Expenditures</i>						
Variable, rub/unit.	120	90	120	150	180	
Fixed, rub.	4000	8000	2000	3000	1000	18000
<b>Total expenditures</b>	<b>0</b>	<b>0</b>	<b>5000</b>	<b>10500</b>	<b>10000</b>	<b>25500</b>
<b>Operational profit</b>	<b>0</b>	<b>0</b>	<b>-50</b>	<b>1600</b>	<b>2850</b>	<b>4400</b>
Profit per unit. rub/unit	0	0	-2	32	57	
Profitability operational %	<b>0,0%</b>	<b>0,0%</b>	<b>-1,0%</b>	<b>13,2%</b>	<b>22,2%</b>	<b>14,7%</b>

## Payments time report

<b>Payments time</b>				
<b>Products/Customers</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>T</b>
Lipstick	100%			
Shampoo		100%		
Cream			100%	
Lotion				100%
Perfume				100%
Payment period, months	1,5	0,5	1,2	0,2
Reliability	60%	50%	80%	40%
<b>Delay, months</b>	<b>0,0</b>	<b>0,7</b>	<b>0,0</b>	<b>1,1</b>
<b>Total payment time, months</b>	<b>1,5</b>	<b>1,2</b>	<b>1,2</b>	<b>1,3</b>

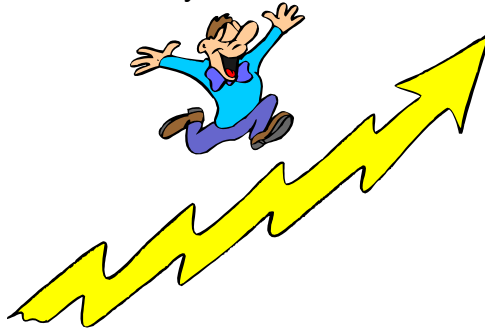


## Other terms

1 cycle = 1 month

Number of cycles – 4

Accounts receivables outstanding at the end of 4<sup>th</sup> (last) month will be discounted by 10%



# Results analyze

## Results analyze

- Game results
- Assortment strategy analyze
- Financing strategies analyze
- Demand and Supply
- Economy of scale
- Profit and cash
- Price of time

## Production volumes

<b>Shinel</b>						
Объемы	Lipstick	Shampoo	Cream	Lotion	Perfume	Total
Месяц 0	0	0	60	0	40	100
Месяц 1	0	0	60	0	40	100
Месяц 2	0	0	0	0	100	100
Месяц 3	0	0	0	0	100	100
<b>Victoria</b>						
Объемы	Lipstick	Shampoo	Cream	Lotion	Perfume	Total
Месяц 0	70	0	0	0	30	100
Месяц 1	0	0	0	100	0	100
Месяц 2	0	0	0	100	0	100
Месяц 3	0	0	0	100	0	100
<b>Nika</b>						
Объемы	Lipstick	Shampoo	Cream	Lotion	Perfume	Total
Месяц 0	100	0	0	0	0	100
Месяц 1	0	0	0	70	30	100
Месяц 2	25	0	25	25	25	100
Месяц 3	0	0	100	0	0	100
<b>Dubua</b>						
Объемы	Lipstick	Shampoo	Cream	Lotion	Perfume	Total
Месяц 0	0	0	50	25	25	100
Месяц 1	0	0	0	100	0	100
Месяц 2	0	0	0	100	0	100
Месяц 3	0	0	100	0	0	100
<b>Oslap &amp; Co</b>						
Объемы	Lipstick	Shampoo	Cream	Lotion	Perfume	Total
Месяц 0	0	100	0	0	0	100
Месяц 1	0	100	0	0	0	100
Месяц 2	0	0	0	0	100	100
Месяц 3	0	100	0	0	0	100

## Assortment strategy analyze

Influence of fixed costs strong enough to make production of small volumes unprofitable

Example

<b>Month 0</b>					
<b>Perfume</b>					
Production volume, units	40	30	0	25	0
	<b>Shinel</b>	<b>Victoria</b>	<b>Nika</b>	<b>Dubua</b>	<b>Ostap &amp; C</b>
Actual price, Rub/unit.	267	267	267	267	267
<b>Sales, rub.</b>	<b>10680</b>	<b>8010</b>	<b>0</b>	<b>6675</b>	<b>0</b>
<i>Expenditures</i>					
Variable, rub/unit.	180	180	180	180	180
Fixed, rub.	1000	1000	1000	1000	1000
<b>Total expenditures</b>	<b>8200</b>	<b>6400</b>	<b>0</b>	<b>5500</b>	<b>0</b>
<b>Operational profit</b>	<b>2480</b>	<b>1610</b>	<b>0</b>	<b>1175</b>	<b>0</b>
Profit per unit. rub/unit	62	54	0	47	0
<b>Profitability operational %</b>	<b>23,2%</b>	<b>20,1%</b>	<b>0,0%</b>	<b>17,6%</b>	<b>0,0%</b>

## Assortment strategy analyze

Necessary to note that simultaneous production by two or more companies large volumes of the same product leads to considerable price drop of that product.

For example, cream was produced at volume only 25 units in month 2, but in month 3 it was produced 200 units already. This situation leads to price lowering from 222 rubles till 211 rubles per unit.

<b>Cream</b>		<b>Month 2</b>	<b>Month 3</b>
Volume		25	200
Price		222	211

## Financial strategy analyze

Cash deficit can be covered by bank's loan. Necessary amount can be calculated as follows:

- + Cash in the beginning of the month
- + Cash receivable from previous periods sales
- + Cash receivable from current month sales
- Production expenditures
- Interest expenses
- = Loan needed

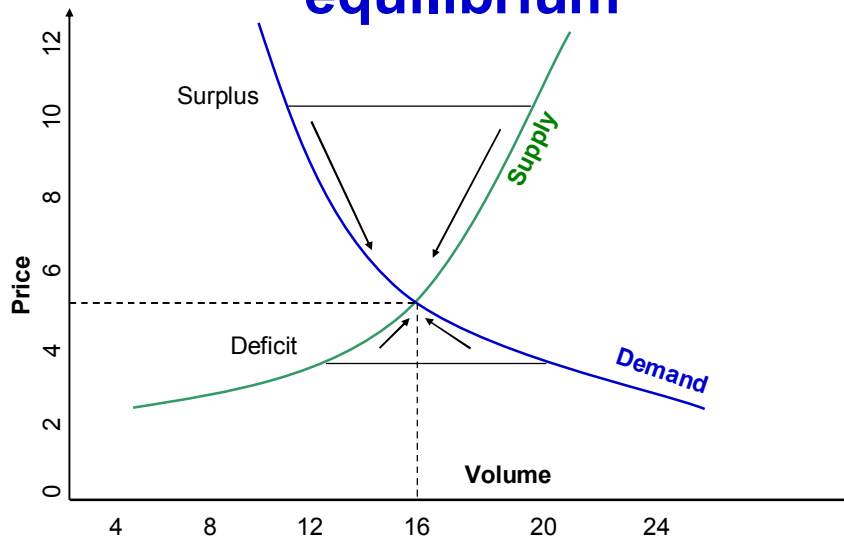
As it is impossible to calculate exactly the amount of cash receivable from current month sales, because nobody knows in advance the sales prices and payment time in our game, we can disregard this cash amount. In this case we can calculate maximum loan amount needed. To exceed this amount means pay additional interest to bank only.

## Financial strategy analyze (example)

Month 1	Shinel	Victoria	Nika	Dubua	Ostap & Co
<i>Loan in the beginning</i>	18 270	19 740	16 800	30 000	17 893
Cash balance in the beginning	-87	-94	-80	8 250	-4
Cash in from previous months sales	13 824	3 204	0	13 290	9 200
Production expenditures	17 400	18 000	19 900	18 000	17 000
Interest (previous loan)	914	987	840	1 500	895
Maximum loan	4 577	15 877	20 820	-2 040	8 699
<b>Maximum loan + interest</b>	<b>4 817</b>	<b>16 713</b>	<b>21 916</b>	<b>-2 147</b>	<b>9 157</b>
<b>Loan actual</b>	<b>18 357</b>	<b>16 000</b>	<b>23 000</b>	<b>0</b>	<b>10050</b>
<i>Cash in from current month sales</i>	8 864	19 760	20 480	19 760	0
Cash balance in the end	21 727	19 083	21 510	21 800	849

Obviously, Shinel borrowed too much in month 1. Maximum that company needed 4577 rub., but they asked 18357 rub., Dubua even could repay the loan at amount of 2147 rub. minimum, but they didn't. Nika and Victoria did everything right, but they didn't into consideration possible income of the current month and lose possibility to save on interest.

## Supply and Demand equilibrium

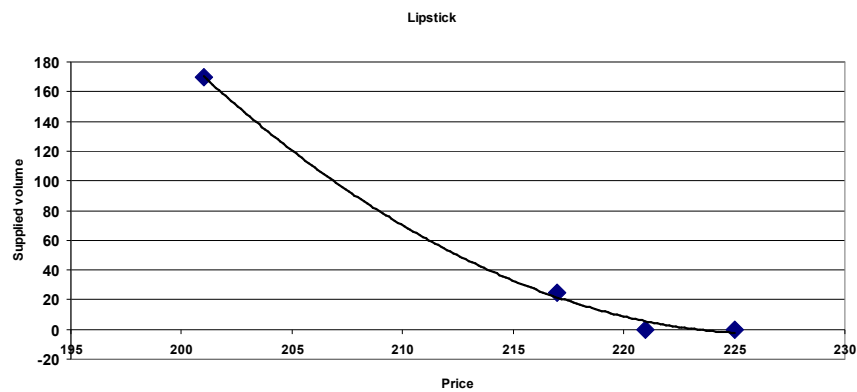


## Supply and Demand Laws

1. Increasing supply leads to price drop.

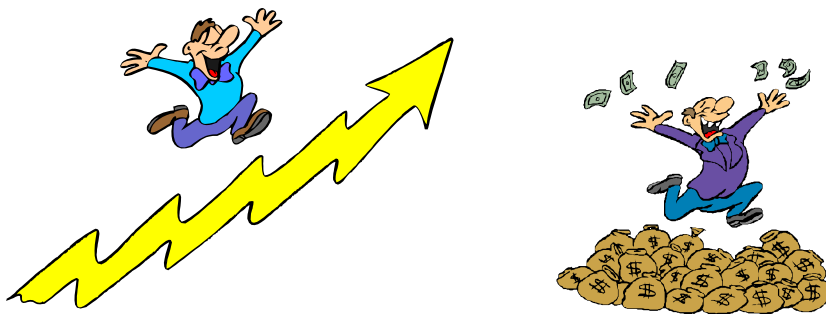


## Price dependence of production volume



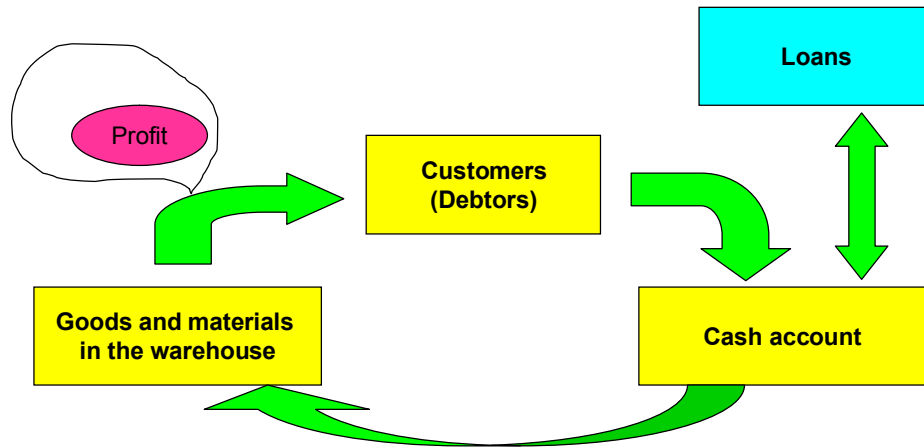
## Economy of scale

2. Produced volume rising leads to the product first cost decreasing and profit per unit rising.



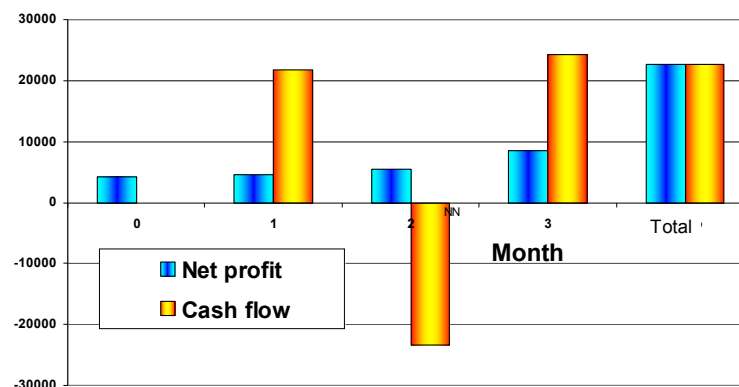
## Cash and Profit

### 3. Cash and profit are not the same



## Cash flow and net profit correlation (example)

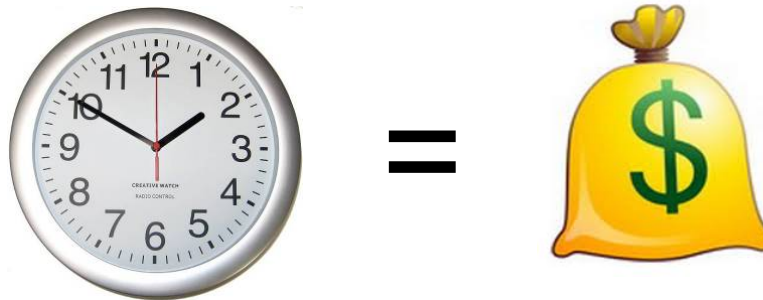
Shinel



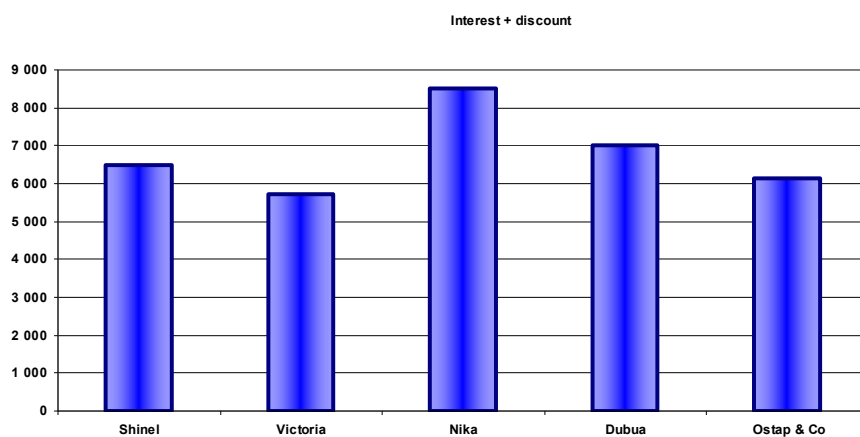
The cash flow balance is equal to accumulated net profit, only because we started the game from "bland print" and finished the game when received all accounts receivables and repaid all loans and debts.

## How much the time costs?

**4. Accounts receivable costs money (Interest + early payment discount)**



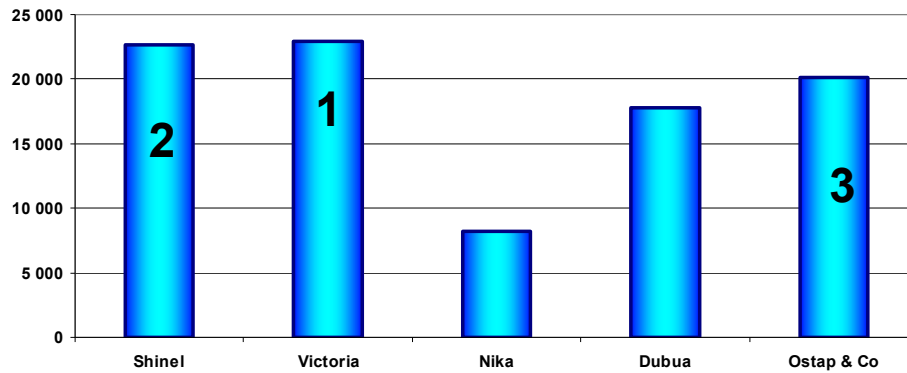
## Financing current assets expenditures





# Victoria for Victoria

Accomulated net profit(accumulated cash flow)



## Resume

- Increasing supply - price drop- crisis of overproduction
- Economy of scale (Produced volume rising leads to the product first cost decreasing)
- Cash  $\neq$  Profit
- Time is money (payment time!)