

Data are aggregated between Initial date: **2011/01/01** and Last date: **2021-01-13**

Finance

©Frederic Kerdraon

October 9, 2016

Contents

1 Introduction

2 Management summary

2.1 PnL Projections

2.1.1 Latex Graph of the scenarios

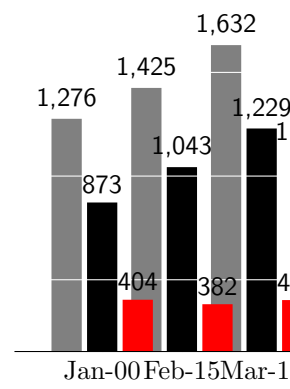
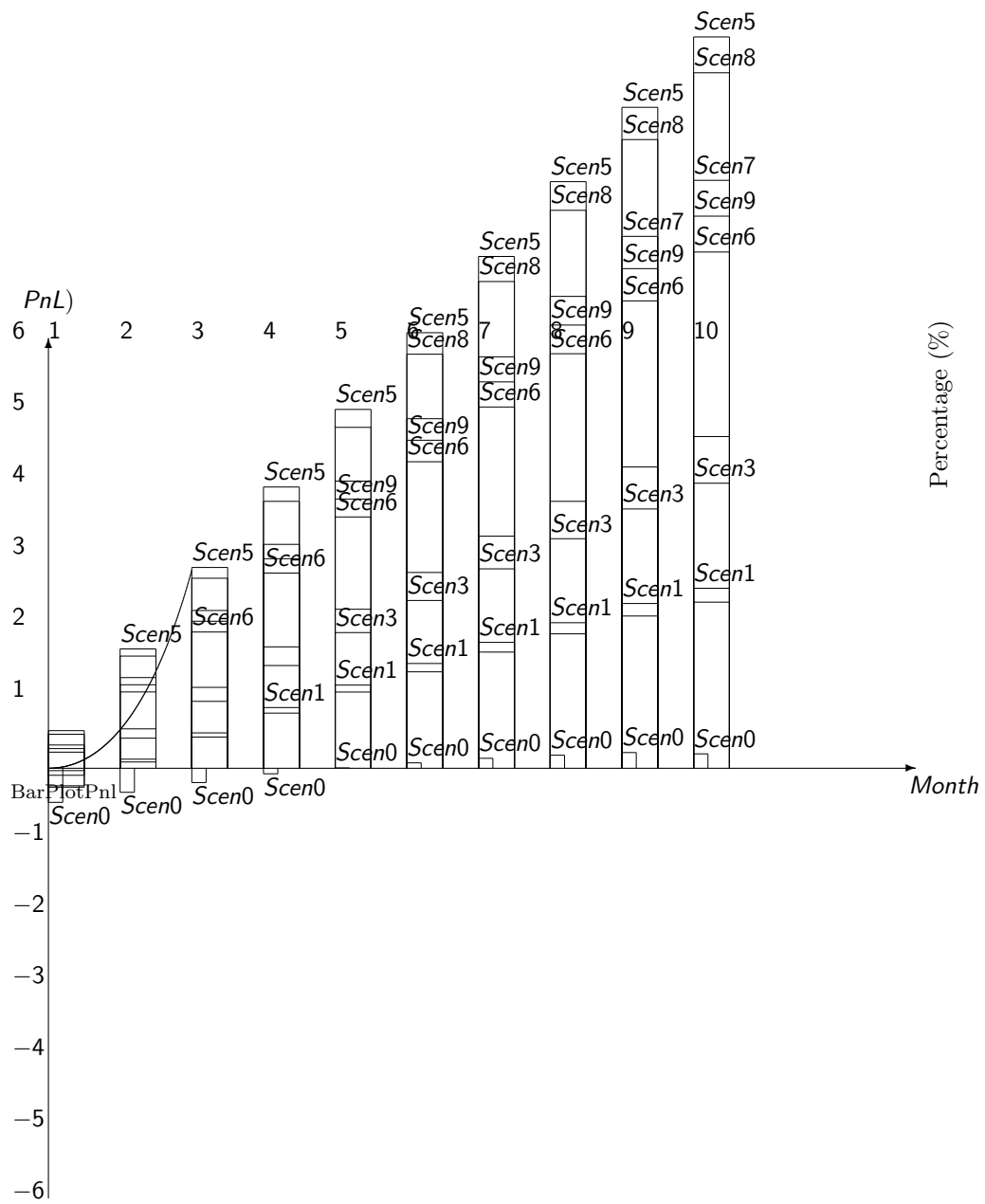
Initial parameters for the simulations.

We apply the scenarios below to see what we get after a few iterations

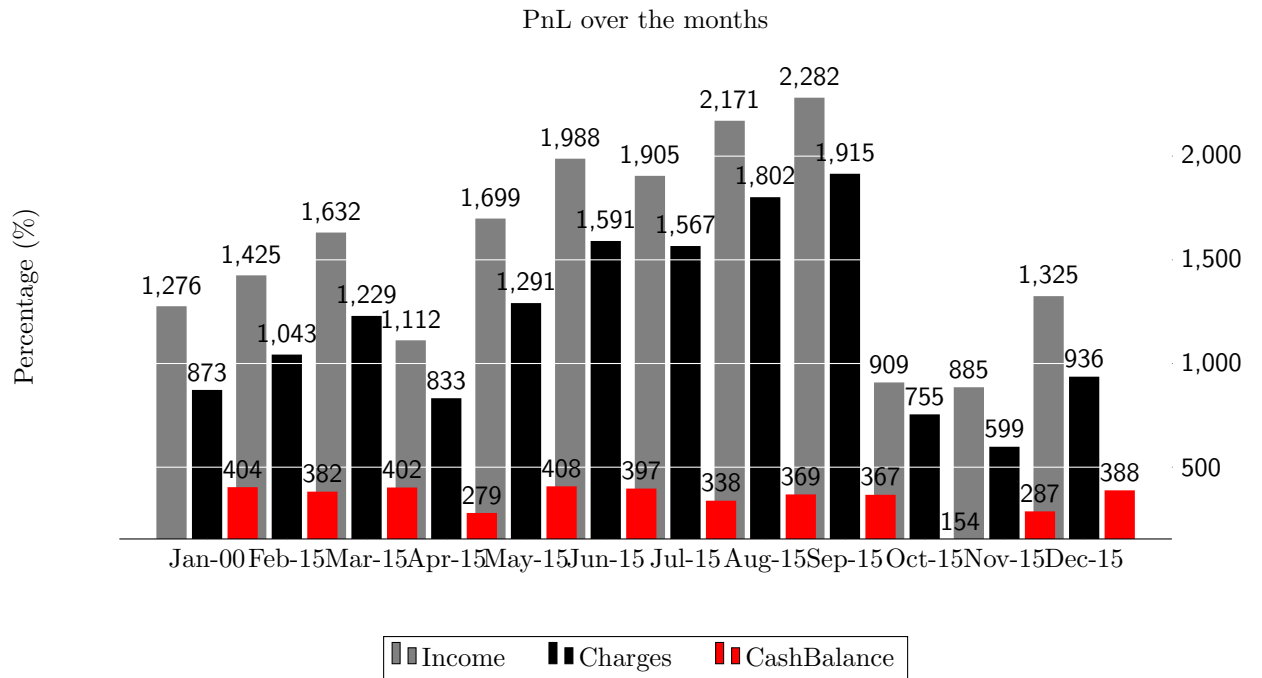
```
my @Scen = (231,529*.4,755*.5,231+529*.4,1000,700,800,950,750);
```

- The first simulation apply a reduction of the Toxics by 231 euros each month
- The second scenario apply a reduction of the debt by 40 percent of the 529
- The third one divide the amount of cash spent by 50 percent
- The fourth one cumulate the reduction of the toxics by 231 euros with the amount of cash spent reduced by 50 percent
- The fifth one is a reduction of 1000 euros each month
- The fifth one is a reduction of 700 euros each month
- The fifth one is a reduction of 800 euros each month
- The fifth one is a reduction of 950 euros each month
- The fifth one is a reduction of 750 euros each month

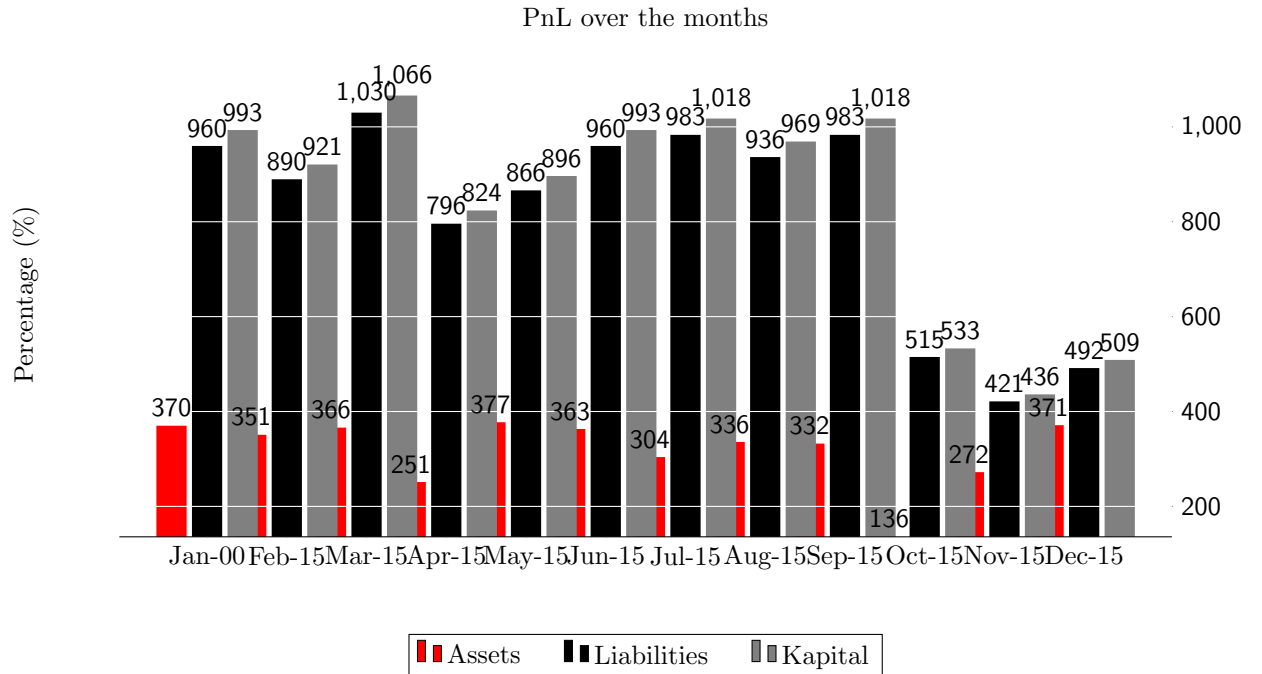
On the graph we can notice that all the scenarios are positive, as they were built to show how to maximize profit just by managing the charge, and especially useless charges.



2.1.2 PnL

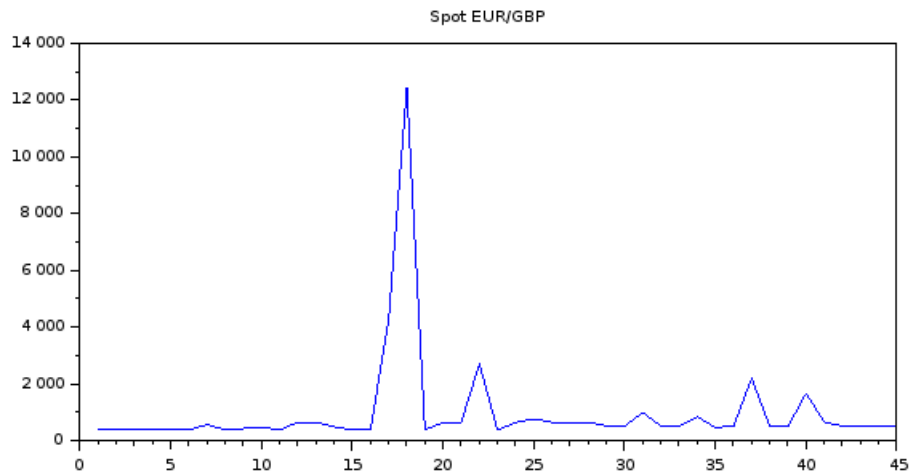


2.1.3 Kapital



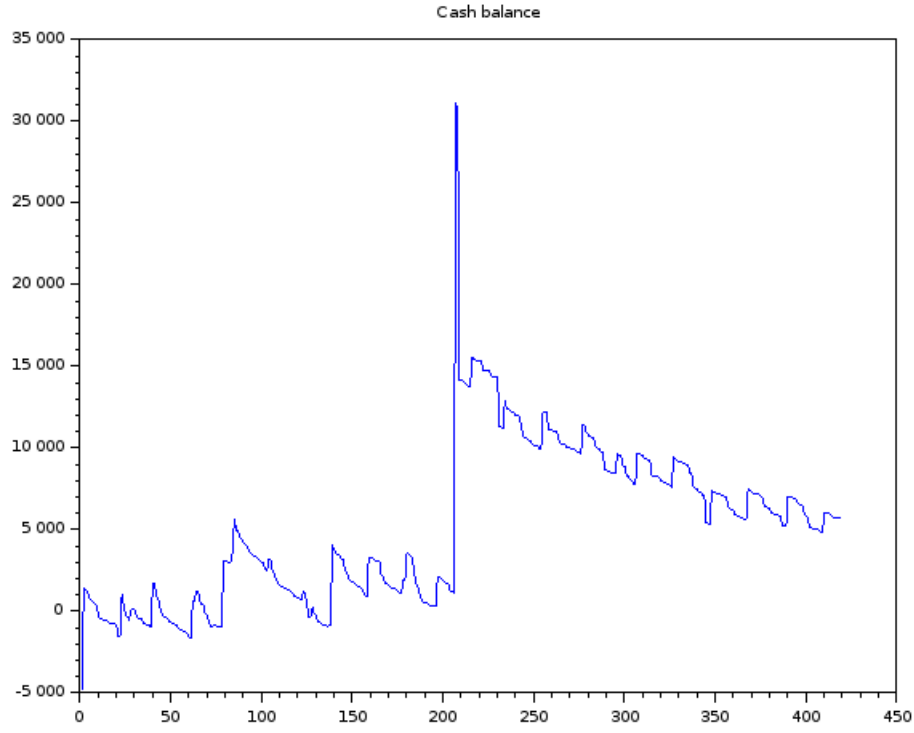
2.1.4 Plot of an example

2.1.5 Graph



This where science enter the game as here can call scilab and there is no limit at what we could calculate... fascinating! How do we populate Scilab with Negative numbers where there are Debits and Positive numbers for the Credit

2.1.6 Graph



2.1.7 Surface

2.1.8 Gaussian Curve

General form for the F distribution with ν_1 and ν_2 degrees of freedom:

$$f(F; \nu_1, \nu_2) = \frac{\Gamma\left(\frac{\nu_1 + \nu_2}{2}\right)}{\Gamma\left(\frac{\nu_1}{2}\right) \Gamma\left(\frac{\nu_2}{2}\right)} \left(\frac{\nu_1}{\nu_2}\right)^{\frac{\nu_1}{2}} \frac{F^{\frac{\nu_1 - 2}{2}}}{\left[1 + \left(\frac{\nu_1}{\nu_2}\right) F\right]^{\frac{\nu_1 + \nu_2}{2}}}$$

Critical region for an F test for various degrees of freedom:

Statistical power in hypothesis testing:

2.1.9 Table

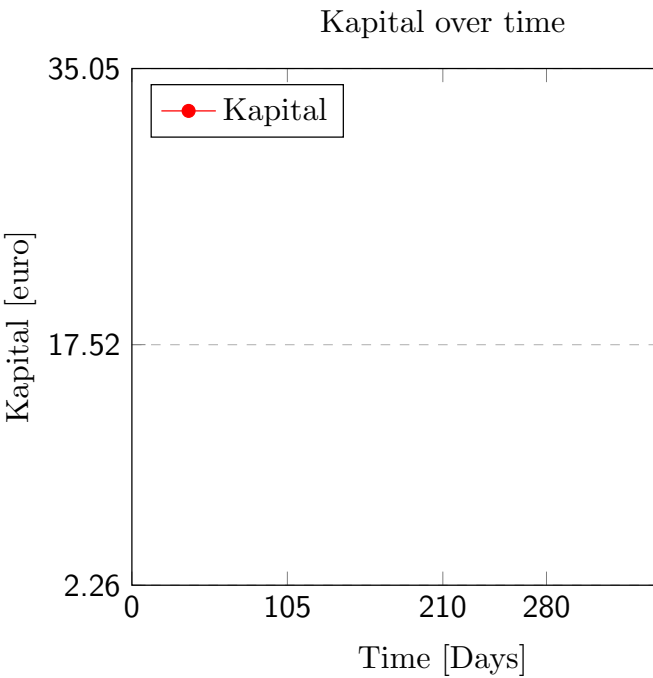
The scenarios given in the table are only examples, the real scenarios are provided in the graph below

Scenarios					
PnL; CumPnL; Tox; Debt(40PnL	CumPnL	Tox	Debt(40%)	Cash(50%)	Tox-Debt(40%)
-475;-475;-244;-263;-97;-32 -475	-475	-244	-263	-97	-32
140;-335;126;87;419;549 140	-335	126	87	419	549
136;-199;493;435;933;1128 136	-199	493	435	933	1128
122;-77;846;769;1432;1693 122	-77	846	769	1432	1693
82;5;1160;1063;1892;2218 82	5	1160	1063	1892	2218
70;75;1461;1345;2340;2731 70	75	1461	1345	2340	2731
63;139;1756;1620;2781;3237 63	139	1756	1620	2781	3237
43;182;2030;1874;3202;3722 43	182	2030	1874	3202	3722
37;219;2298;2123;3616;4202 37	219	2298	2123	3616	4202
-18;200;2510;2316;3975;4626 -18	200	2510	2316	3975	4626

All the figures need to be checked carefully by someone who knows what it's doing.

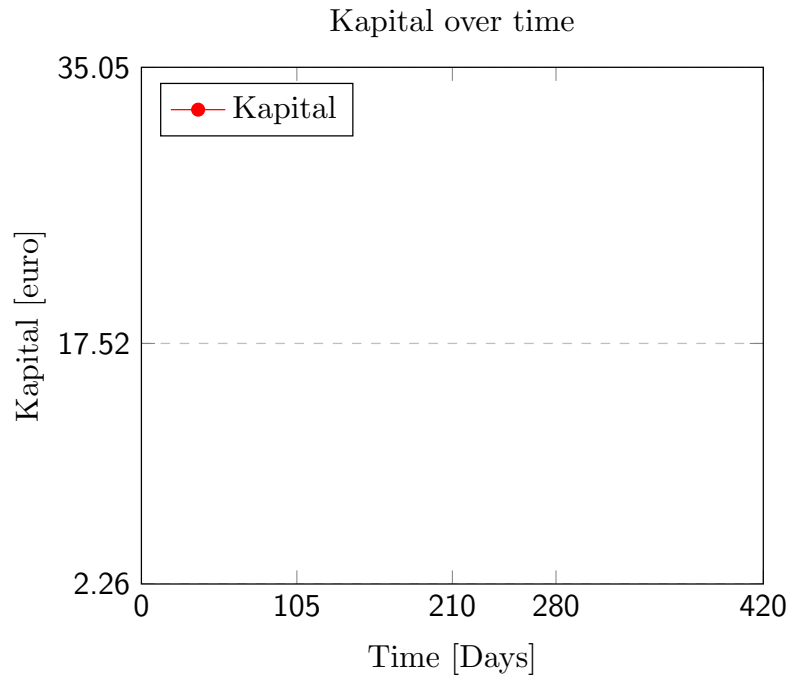
2.2 History and extrapolations

2.2.1 Kapital curve



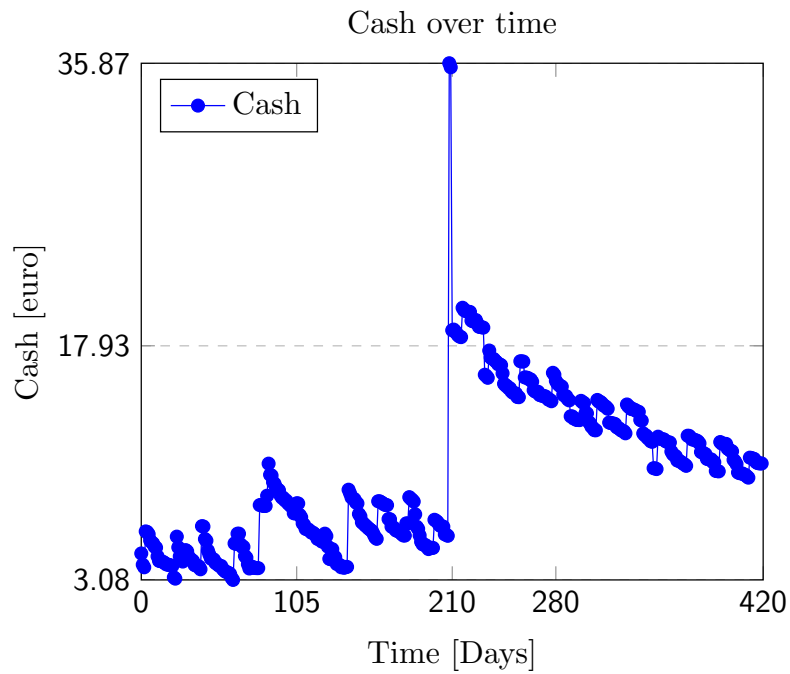
Kapital trend,Assets trend,Liabilities trend,Leverage trend“

2.2.2 PnL curve

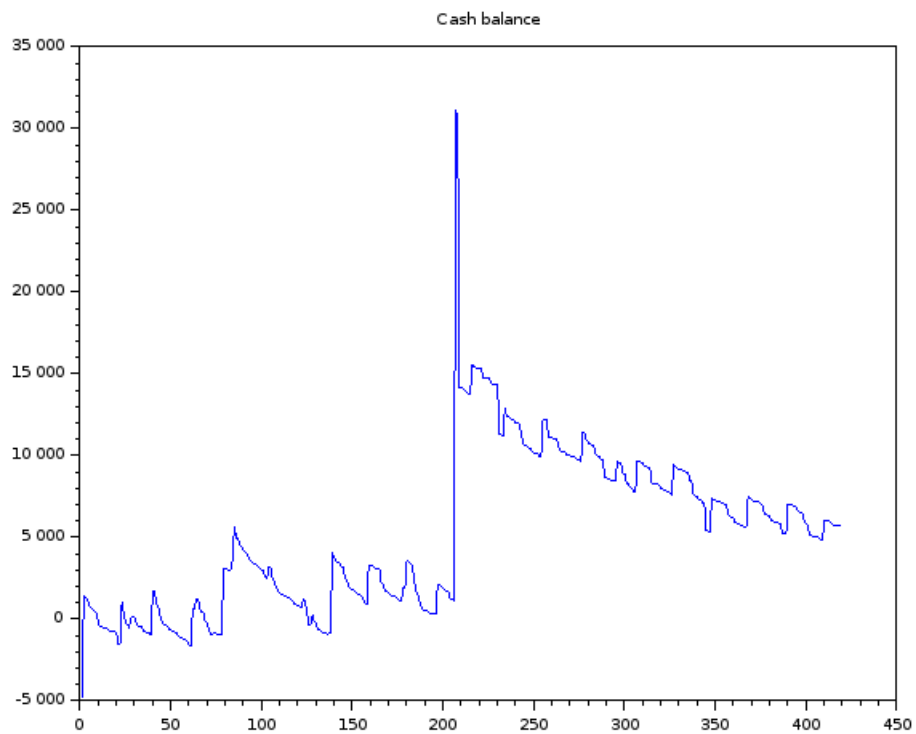


2.2.3 Cash curve

Funny cashflow/kapital superior to percent“



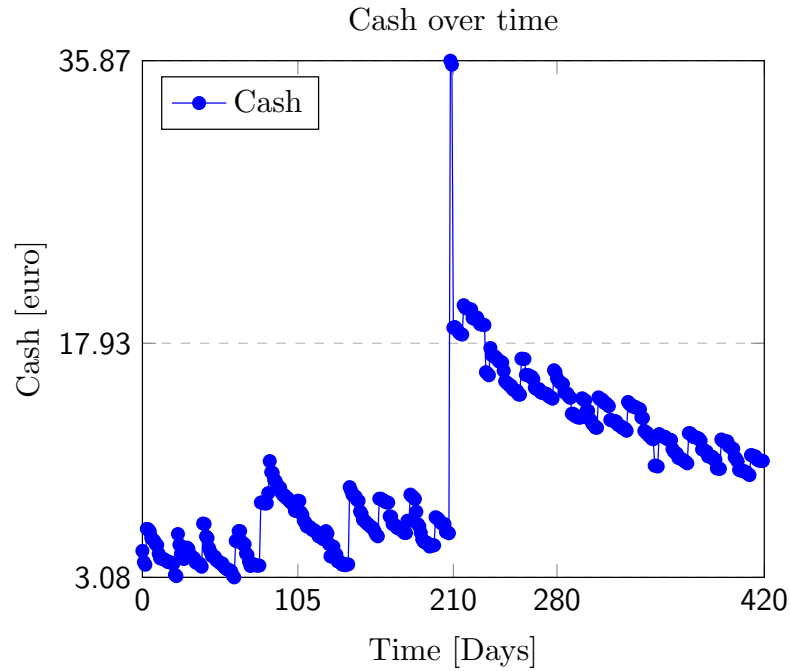
2.2.4 Cash curve from Scilab man!



3 Cash Balance Management

3.1 Monthly drift

3.1.1 Table



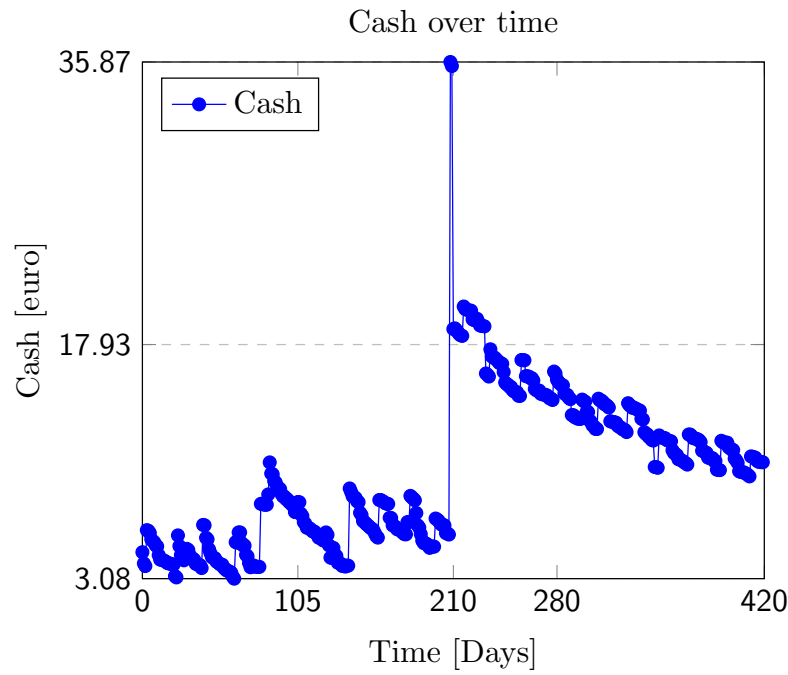
3.1.2 Table

Cashflows					
MinDate	MaxDate	Income	Charges	PnL	NumDays
2011-01-01	2021-01-13	83303	77592	5711	3665
2011-01-01	2016-10-07	83303	77592	5711	2106
2011-01-01	2016-10-06	83303	77588	5715	2105
2011-01-01	2016-10-05	83303	77581	5722	2104
2011-01-01	2016-10-04	83303	77558	5745	2103
2011-01-01	2016-10-03	83303	77484	5819	2102
2011-01-01	2016-09-30	83303	77308	5995	2099
2011-01-01	2016-09-29	83303	77278	6025	2098
2011-01-01	2016-09-28	83303	77246	6057	2097
2011-01-01	2016-09-27	83303	77223	6080	2096
2011-01-01	2016-09-26	82027	77216	4811	2095
2011-01-01	2016-09-21	82027	77134	4893	2090
2011-01-01	2016-09-20	82027	77044	4983	2089
2011-01-01	2016-09-19	82027	77018	5009	2088
2011-01-01	2016-09-16	82027	76951	5076	2085
...

Total					
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To be able to have data for the drift, you need to build a C++ insert like for the kapital go through the dates in the cashflows, and calculate a drift based on this (modulo the salary)

3.1.3 Graph

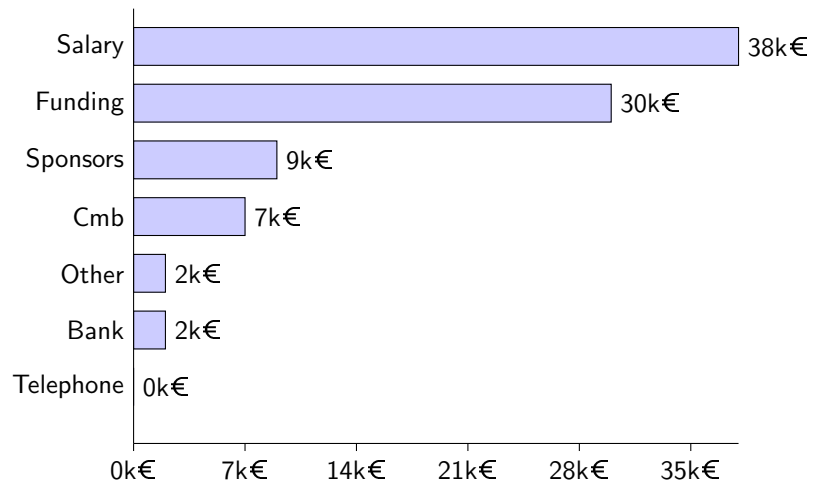


3.2 Incomes

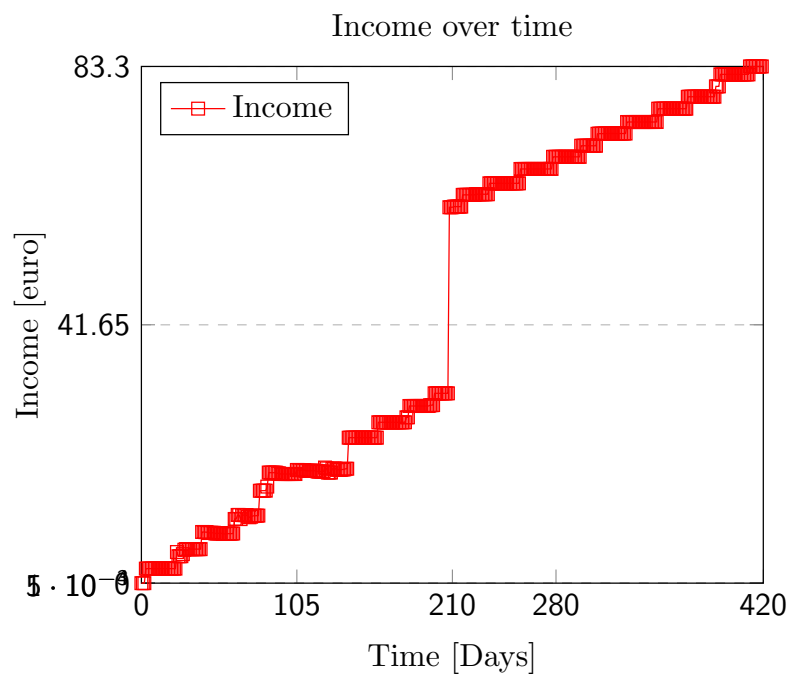
3.2.1 Table

Cashflows			
Category	Debit	Credit	PnL
Salary	0	38307	38307
Funding	0	30000	30000
Sponsors	0	9000	9000
Cmb	0	7287	7287
Other	0	2058	2058
Bank	0	2056	2056
Telephone	0	128	128
...
Total	77592	83303	5711

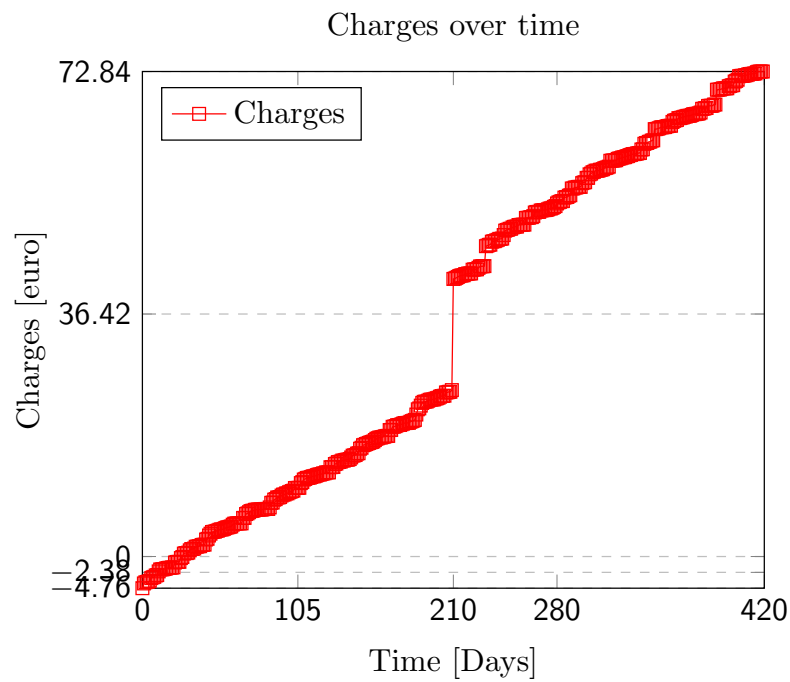
3.2.2 Graph



3.2.3 Chart



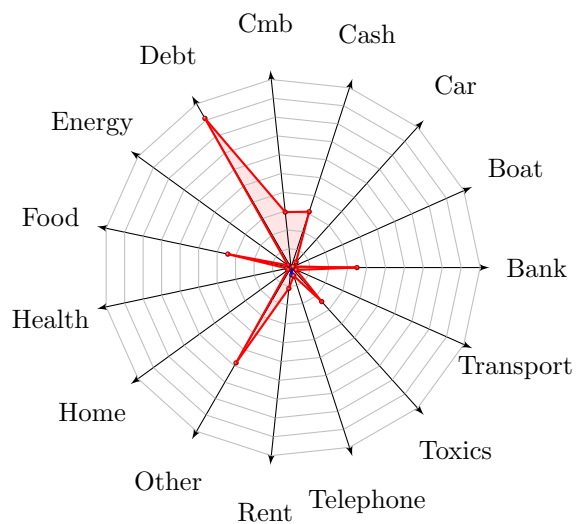
3.3 Charges



3.3.1 Charges plot

Removed to preserve my eyes from the colors....!!!!“

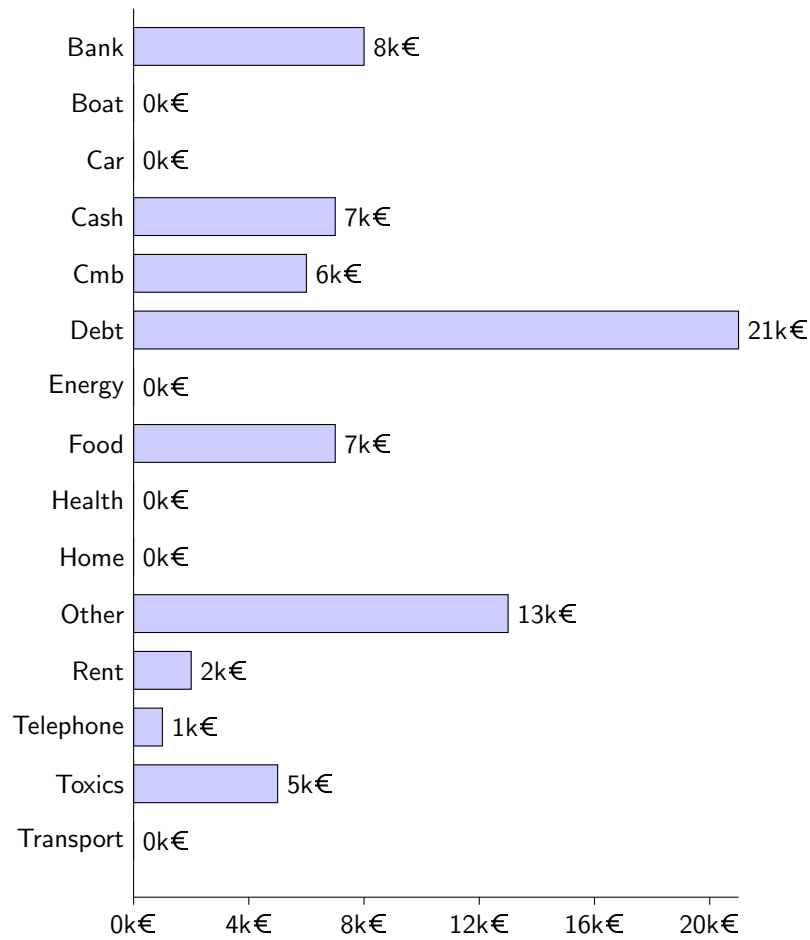
3.3.2 Charges kiviati



3.3.3 Table

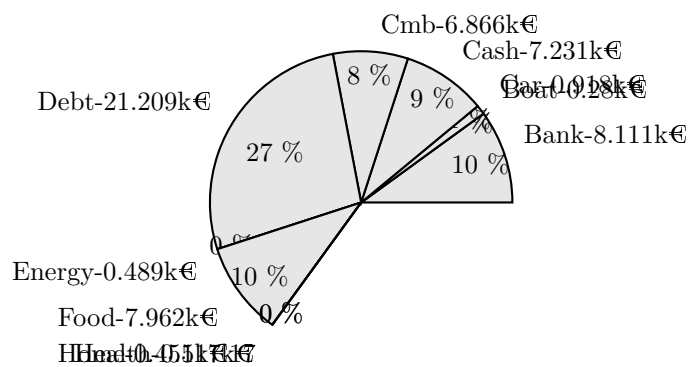
Cashflows			
Category	Debit	Credit	PnL
Bank	8111	0	-8111
Boat	280	0	-280
Car	918	0	-918
Cash	7231	0	-7231
Cmb	6866	-963	-7829
Debt	21209	0	-21209
Energy	489	0	-489
Food	7962	0	-7962
Health	517	0	-517
Home	451	0	-451
Other	13551	0	-13551
Rent	2582	0	-2582
Telephone	1073	0	-1073
Toxics	5635	0	-5635
Transport	717	0	-717
...
Total	77592	83303	5711

3.3.4 Graph



3.3.5 Chart

3.3.6 Cheese



4 Asset Liability Management

4.1 Kapital

4.1.1 Table

History of the Kapital is available in the database (select * from kapital)

4.1.2 Graph

A graph of the kapital and not income and charges cumulated should be easy to build. Say a readKapital which would select the cash balance + all the other stuff like assets - liabilities
Better do it with Latex than with the C++

4.1.3 History

Historical graph of the kapital, liab and assets, yearly ALM management“

4.1.4 Definitions

Vp: value weight (basically the value of the asset against the total value - to be replaced by InitPrice)“ Rp: return weight (the return compared to the total returns)“ Cp: cost weight (the maintenance cost compared to the total maintenance“ Vd: historical deprecation of value (the Value compared to the InitPrice“ R/V: monthly rentability (the return minus the maintenance)“

4.1.5 Ratios

Vp = value/Totalvalue“ Rp = return/Totalreturn“ Cp = cost/Totalmaintenance“ Vd = value/Initprice“ R/V = return/Value“

4.1.6 Formulas

$\lim_{x \rightarrow \infty} \exp(-x) = 0$ “

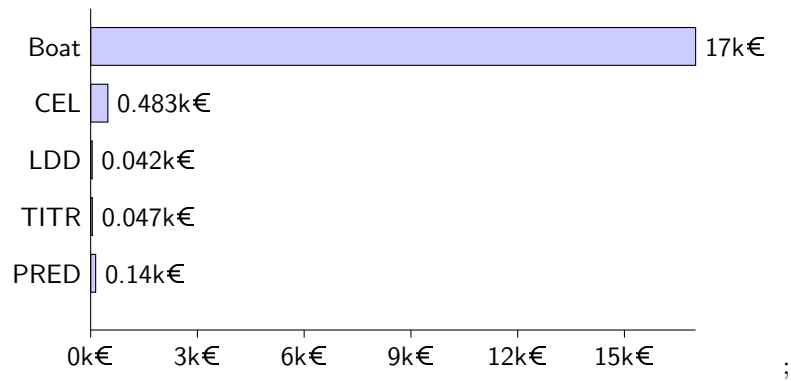
4.2 Assets

4.2.1 Data

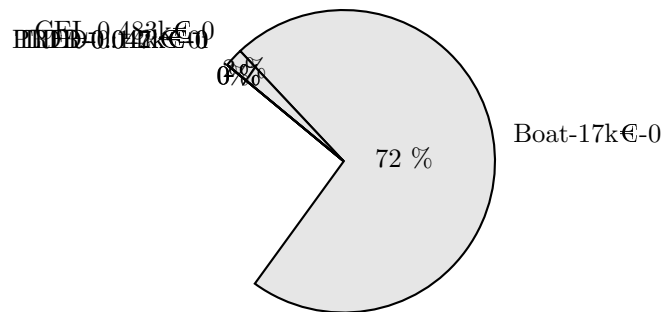
The top 5 assets are listed sorted by value, but the totals are given for all the assets as of today“

Assets											
Type	Name	Maturity	Value	Return	Cost	InitPrice	vp	rp	mp	dv	PnL(R/V)
Boat	Acquisition	2013-01-07	17000	50	400	30000	72	0	3	56	0
CEL	Acquisition	2013-01-07	483	50	400	30000	2	0	3	1	0
LDD	Acquisition	2013-01-07	42	50	400	30000	0	0	3	0	0
TITR	Acquisition	2013-01-07	47	50	400	30000	0	0	3	0	0
PRED	Acquisition	2013-01-07	140	50	400	30000	0	0	3	0	0
...
	Total assets	272834	23408	7991	10267						-2276

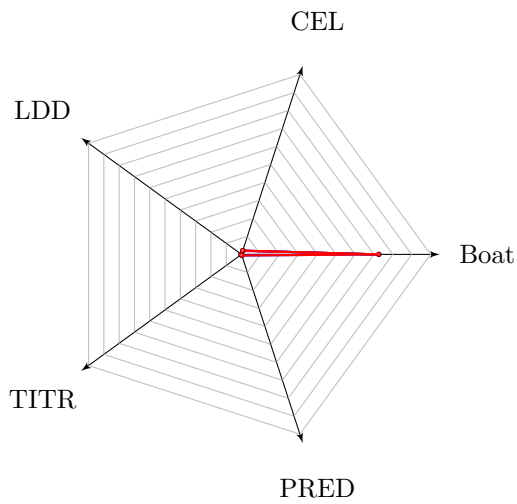
4.2.2 Graph



4.2.3 Cheese



4.2.4 Kiviat



Seems like the assets Cheese

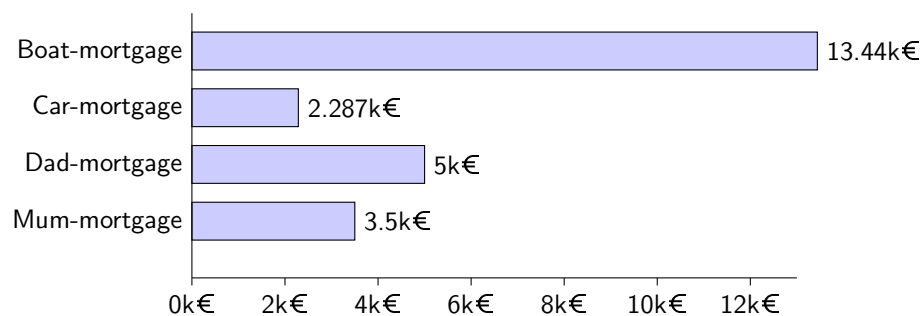
4.3 Liabilities

The top 4 liabilities are listed but the totals are given for all the liabilities“

4.3.1 Table

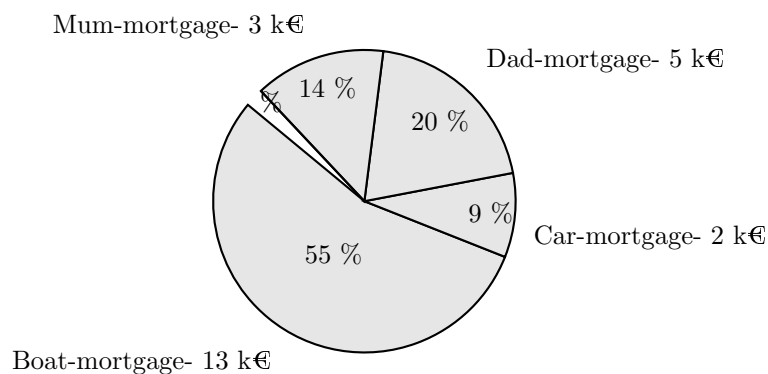
Liabilities											
Type	Name	InitPrice	Value	Return	Cost	Maturity	vp	rp	mp	dv	PnL
Boat-mortgage	mortgage	30000	13440	0	1	2013-01-07	55	0	25	44	0
Car-mortgage	mortgage	7000	2287	0	1	2013-01-07	9	0	25	32	0
Dad-mortgage	mortgage	5000	5000	0	1	2013-01-07	20	0	25	100	0
Mum-mortgage	mortgage	3500	3500	0	1	2013-01-07	14	0	25	100	0
...
	Total	45500	24227	0	4						-4

4.3.2 Graph



4.3.3 Chart

4.3.4 Cheese



5 Cashflows

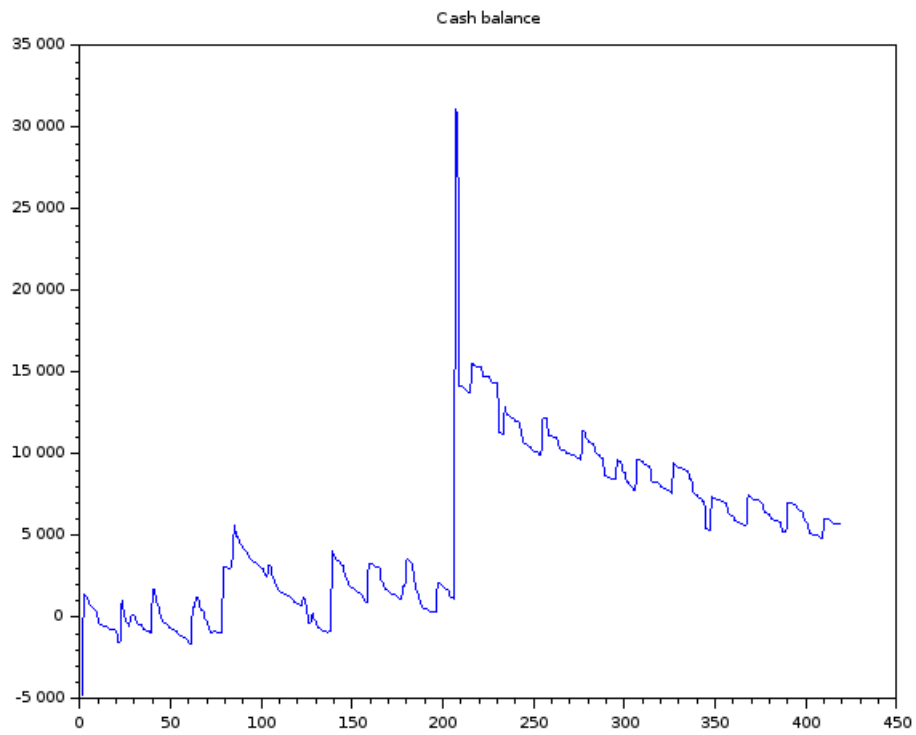
All cashflows from history are being used here“

5.0.5 Table

Cashflows

Category	Debit	Credit	PnL
Debt	21209	0	-21209
Other	13551	0	-13551
Bank	8111	0	-8111
Food	7962	0	-7962
Cash	7231	0	-7231
Cmb	6866	-963	-7829
Toxics	5635	0	-5635
Rent	2582	0	-2582
Telephone	1073	0	-1073
Car	918	0	-918
...
Total	72837	83304	10467

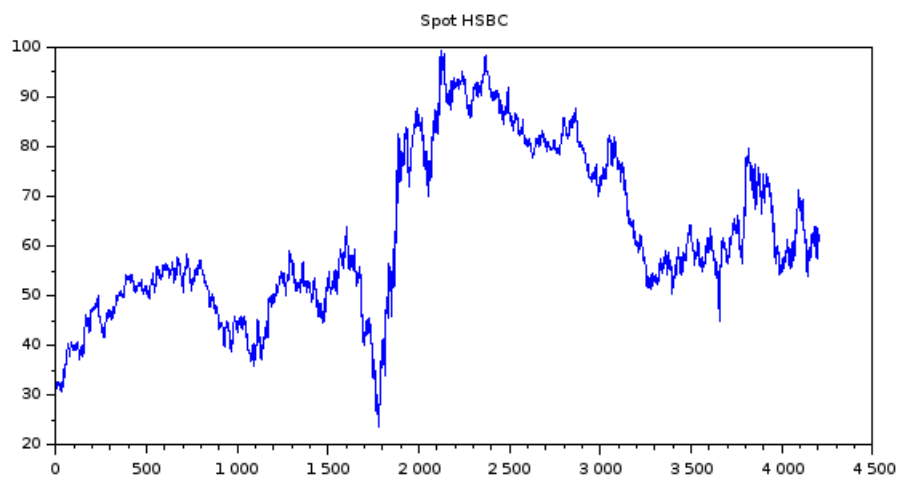
7 Cash balance



is the graph of my EUR cashbalance

This

8 Stocks



is the graph of HSBC stock

This

8.0.7 Table

Stocks table is available in the database ;-)
`select * from stocks`

8.0.8 Graph

The graph is also available and produced by C++ under "legends"