

The benefits of unit cost averaging

The benefits of unit cost averaging are twofold:

1. arithmetical: see the numbers – this can dramatically increase your returns
2. psychological: don't you hate seeing an investment going down right after purchase? Do you anguish trying to get the timing right, while knowing you can't? Adopt "baby steps" – it lifts all the pressure!

The idea is that, by investing a fixed dollar amount per month, more shares will be purchased when they are cheap than when they are expensive, and the average unit price is acceptably low. In a global financial market that remains volatile the benefits of unit cost averaging are considerable. Nothing beats perfect timing of course, but most of us will acknowledge the difficulty of market timing and many of us consider it next to impossible. The best way of demonstrating unit cost averaging is with an example of a 10 years plan to invest \$ 1.000 each year with an underlying investment that has a normal fluctuating price on the market.

	Price	Investment	Units bought	End value
Year 1	10	\$ 1.000	100,00	\$ 1.300
Year 2	7	\$ 1.000	142,86	\$ 1.857
Year 3	12	\$ 1.000	83,33	\$ 1.083
Year 4	14	\$ 1.000	71,43	\$ 929
Year 5	9	\$ 1.000	111,11	\$ 1.444
Year 6	6	\$ 1.000	166,67	\$ 2.167
Year 7	6	\$ 1.000	166,67	\$ 2.167
Year 8	9	\$ 1.000	111,11	\$ 1.444
Year 9	12	\$ 1.000	83,33	\$ 1.083
Year 10	12	\$ 1.000	83,33	\$ 1.083
End of term	13	\$ 10.000	1.119,8	\$ 14.557

The average entry cost would have been a comfortable \$ 9.7, and the gain on the overall portfolio by the end of 10 years would have been a bit more than 45%.

Had one been impeccably lucky with the timing, and invested the whole sum in year 6, one could have made 116%. Had one been unlucky enough to invest at the peak in year 4 the outcome would have been a loss of 7%. The lump sum investor that would have bought from the start in year 1 would have had a return of 30%. The arithmetic mean of returns on a lump sum investment is 45%, and that is the figure obtained by unit cost averaging, comforted during the dips by the knowledge that the investor still had cash to spend and was currently obtaining even more bang for the buck.

The fallacy of safety:

Volatility of price is often perceived as the main measure of risk, not so much the probability of the net return towards the end of the investment horizon. For now we will look at the same investment plan as above but with a non-volatile "safe return" investment, that steadily grows 4.5% in value each year.

	Price	Investment	Units bought	End value
Year 1	10,00	\$ 1.000	100,00	\$ 1.553
Year 2	10,45	\$ 1.000	95,70	\$ 1.486
Year 3	10,92	\$ 1.000	91,58	\$ 1.422
Year 4	11,41	\$ 1.000	87,64	\$ 1.361
Year 5	11,93	\$ 1.000	83,82	\$ 1.302
Year 6	12,46	\$ 1.000	80,26	\$ 1.246
Year 7	13,02	\$ 1.000	76,80	\$ 1.193
Year 8	13,61	\$ 1.000	73,48	\$ 1.141
Year 9	14,22	\$ 1.000	70,32	\$ 1.092
Year 10	14,86	\$ 1.000	67,29	\$ 1.045
End of term	15,53	\$ 10.000	826,89	\$ 12.841

The average entry cost would have been \$ 12.3, and the gain on the overall portfolio by the end of 10 years would have been a modest 29%.

So even though the price at the end of the 10 years term is higher than in our previous example, we end up with a significant lower return. This time the unit cost averaging works against us because we had to buy units at higher cost each year, a consequence of the "safe" investment strategy. An investment plan for unit cost averaging preferably starts with high volatility in the underlying investment, the careful observer will understand that the method in itself works in his favor.

A unit cost averaging programme cannot guarantee superior performance (if the market goes straight down with no rebound, or for that matter straight up with no pause, it won't help), but the probabilities are in favor. Moreover, the greater the volatility, the greater the benefit. Market volatility is often unsettling for investors, so this is fortuitous.

An example using the basket of 4 approach

Buying equal portions each quarter in to 4 volatile funds with high expectations started of as below in September 2004. The investment plan runs for 10 years and thus ends in September 2014.

Example Zurich unit cost averaging started September 2004:

	Basket 1		Basket 2		Basket 3		Basket 4		
Allocation:	25%		25%		25%		25%		
Quarter 1:	Latin America		India		Eastern Europe		Australia		Paid in:
Invested	1,625		1,625		1,625		1,625		6,500
Price	2.003		3.487		3.799		1.422		
Quarter 2:	Latin America		India		Eastern Europe		Australia	SOLD	
Invested	3,250		3,250		3,250		3,250		13,000
Price	2.479	23.8%	4.252	21.9%	4.395	15.7%	1.633	14.8%	
Quarter 3:	Latin America		India		Eastern Europe		China	BOUGHT	
Invested	4,875		4,875		4,875		5,347		19,500
Price	2.878	43.7%	4.571	31.1%	5.174	36.2%	2.615	0.0%	
Quarter 4:	Latin America		India		Eastern Europe		China		
Invested	6,500		6,500		6,500		6,972		26,000
Price	2.983	48.9%	4.840	38.8%	5.113	34.6%	2.596	-0.7%	
Quarter 5:	Latin America		India		Eastern Europe	SOLD	China		
Invested	8,125		8,125		8,125		8,597		32,500
Price	3.345	67.0%	5.375	54.1%	6.109	60.8%	2.739	4.7%	
Quarter 5:	Latin America	SOLD	India		Thailand	BOUGHT	China		
Invested	8,125		8,125		13,065		8,597		32,500
Price	3.900	94.7%	5.572	59.8%	1.266	0.0%	2.765	5.7%	
Quarter 6:	ML Energy	BOUGHT	India		Thailand		China		
Invested	17,444		9,750		14,690		10,222		39,000
Price	1.664	0.0%	5.572	59.8%	1.348	6.5%	2.765	6.5%	
Quarter 6:	ML Energy		India		Thailand		China		
Invested	17,444		9,750		14,690		10,222		39,000
Price	1.947	17.0%	6.393	83.3%	1.561	23.3%	3.208	22.7%	
Quarter 7:	ML Energy		India		Thailand	SOLD	China	SOLD	

Invested Price	19,069 1.835	10.3%	11,375 7.082	103.1%	14,690 1.544	22.0%	11,847 3.386	29.5%	45,500
Quarter 7: Invested Price	ML New Energy 19,069 1.583	-4.9%	India 11,375 7.089	103.3%	Fidelity Europe 14,690 1.898	0.0%	Threadneedle Japan 11,847 146.830	0.0%	45,500
Quarter 8: Invested Price	ML New Energy 22,069 1.607	-3.4%	India 14,375 7.249	107.9%	Fidelity Europe 17,690 1.802	-5.1%	Threadneedle Japan 14,847 140.680	-4.2%	57,500
Quarter 9: Invested Price	ML New Energy 25,024 1.512	-9.1%	India 17,330 6.691	91.9%	Fidelity Europe 20,645 1.814	-4.4%	Threadneedle Japan 17,802 136.470	-7.1%	69,321

Graphical performance of the 4 baskets of funds:

