M.M.WARBURG & CO
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History of undervalued stocks, evil banks, and incompetent clients

It sounds like a comparatively easy task to make statements about stock valuations and draw inferences as to which names and sectors exhibit an especially attractive valuation level. Indeed, to have a very easy time of it, one need only look at key figures like the price-earnings ratio (P/E) to put stocks or entire sectors in a certain order in respect to valuation and draw conclusions about (putative) relative attractiveness. However, anyone who seriously believes that appreciable added value can be achieved based on such a trivial procedure underestimates the efficiency of capital markets. When a stock has a low P/E, there is usually a reason. It rather seldom occurs that investors completely overlook an entrepreneurial "jewel" and assign a misvaluation on the market. One may rather assume that a low P/E usually accompanies very low or even absent profitability or poor financial quality. What appears at first as a "bargain" often turns out to be a non-starter on closer inspection. However, the difficult question is what valuation markdown is justified by low profitability or poor financial quality. There are no textbook solutions, or even rules of thumb. To a certain extent, analysts and investors must answer the question for themselves whether a markdown is justified in a concrete case. And it gets harder from there. There are market phases in which stocks are penalized heavily in their prices and hence in their P/E ratios for "deficiencies" in profitability, earnings growth, or financial quality, while broad indifference to such considerations prevails in other market phases. Under such circumstances, it seems almost impossible to talk with sufficient confidence about clearly overvalued or undervalued stocks. In a way, it even bespeaks a lack of humility to believe oneself capable of consistently making crystal-clear statements here.

Those who know us know that we do not give up that quickly. Should it really be impossible to make assertions about the putative attractiveness of stocks? Things are presumably not that bad. Even if the market is also looking for fair value, hardly anyone believes that it manages to do that with high accuracy every day. After all, the volatility of stock prices is many times greater than the volatility of the underlying fundamental data, which is an unmistakable sign that the market sometimes exaggerates in its search and overshoots. Precisely those moments can be utilized to collect a little gold dust here and there. But how can one proceed systematically. Ultimately, gold dust is only fun if one has relatively large quantities of it, and you need a plan and a concept to get that.

Here, we propose a concept for systematically analyzing the valuation of stocks that, to our knowledge, has not been published to date, at least not in this form. This is what our proposal looks like. First, we assume that there is no such thing as "the" valuation ratio. Besides the P/E, many other ratios describe the valuation of a stock from different perspectives. Our analysis uses about 50 different valuation ratios, each of which is set in relation to a large number of other ratios that may describe, for example, the financial quality, profitability, or price volatility of a stock. We do that with the help of a multiple regression analysis. That is a statistical method used in the attempt to optimally explain one ratio (in this case, the valuation ratio) by means of others. Ideally, we can use statistical means to derive a "fair" valuation from which we can then infer a concrete overvaluation or undervaluation of individual stocks in a second step.

To this point, the procedure is not very spectacular. This or something like it is more or less what is done around the world to look for possibly undervalued stocks by statistical methods. As so often, though, the devil is also in the details here. For, one arrives at different results depending on the specification of the models and ratios used. Moreover, that must be the case because there can never be a "global formula" for inferring a fair valuation. However, the error due to misspecification of the model can be dramatically reduced by calculating an extremely large number of possible (and of course plausible) models and specifications. And that is right where we start. Instead of working with one equation and believing it can describe stock valuations adequately, we automatically generate thousands of equations that all deal with the question of fair valuation from marginally different angles. Ultimately, we obtain results that rest on an extremely broad statistical base in which individual distortions and errors offset and hence neutralize each other overall as far as possible (or so we hope).

Here, at the latest, the reader will ask which stocks come out positive now in such an analysis, since that is the point of all this effort. Of course, we could present a list of attractively valued stocks here, but unfortunately we are no longer allowed to. Yes, you have read correctly. We would be very glad to share our findings with you, but lawmakers and regulatory authorities have barred this kind of information exchange as a result of a regulation that overshoots its objective.

The reason for that is easy to explain. Both the legislature and the courts now assume that citizens and consumers are no longer competent to handle their affairs. On the contrary, they seem to assume that consumers are stupid and naively allow themselves to be exploited constantly and without limit by evil banks. That is why we are no longer allowed to name any presumptively attractive stocks in such a publication. For, it could be that you, dear reader, would run impetuously to the next bank office and pledge your home and fortune to invest in these few stocks, and in the process be bamboozled by the bank on the transaction. Apparently, no one can imagine now that such a research publication might also simply serve the purpose of civilized communication concerning capital market topics in which the bank is a fair advisor and sparring partner. This is almost a matter of despair for us. It assumes that banks engage in business practices that make absolutely no sense even in their own economic interest.

And it gets even worse. The vacuum created by the radio silence imposed on banks is being filled increasingly by dubious financial gurus up to no good in the internet and other media and (unlike banks) not subject to regulation. It is hard to imagine that lawmakers would want this, but that is exactly what happens when they ply their craft largely removed from the real world and mainly driven by ideology.

Over- and undervaluation of sectors on industry group level

Sector on ICB level 5	Z-score of valuation attractiveness (the higher, the more attractive)
Home Construction	2,1
Home Improvement Ret.	1,9
Delivery Services	1,8
Aluminum	1,6
Bus.Train & Employmnt	1,5
Auto Parts	1,5
Travel & Tourism	1,4
Integrated Oil & Gas	1,3
Automobiles	1,3
Paper	1,2
Consumer Electronics	1,2
Nonferrous Metals	1,2
Tires	1,1
Full Line Insurance	1,1
Reinsurance	1,1
Electrical Equipment	1,1
Iron & Steel	1,0
Containers & Package	1,0
General Mining	0,9
Life Insurance	0,9
Airlines	0,8
Recreational Services	0,8
Comm. Vehicles,Trucks	0,7
Industrial Suppliers	0,7
Gold Mining	0,7
Dur. Household Prod.	0,7
Heavy Construction	0,6
Specialty Retailers	0,6
Renewable Energy Eq.	0,6
Multiutilities	0,6
Food Retail,Wholesale	0,6
Divers. Industrials	0,6
Nondur.Household Prod	0,6
Commodity Chemicals	0,6
Defense	0,5
Forestry	0,5
Broadline Retailers	0,5
Con. Electricity	0,4
Computer Services	0,4
Prop. & Casualty Ins.	0,4
Gas Distribution	0,3
Gambling	0,3
Farm Fish Plantation	0,3
Oil Equip. & Services	0,2
Fixed Line Telecom.	0,2
Building Mat.& Fix.	0,2
Industrial Machinery	0,1
Water	0,1
Broadcast & Entertain	0,1

Over- and undervaluation of sectors on industry group level	
Sector on ICB level 5	Z-score of valuation attractiveness (the higher, the more attractive)
Tobacco	0,1
Exploration & Prod.	0,1
Soft Drinks	0,1
Business Support Svs.	0,0
Investment Services	0,0
Asset Managers	0,0
Food Products	0,0
Specialty Chemicals	0,0
Marine Transportation	-0,1
Mobile Telecom.	-0,1
Computer Hardware	-0,1
Banks	-0,2
Aerospace	-0,2
Hotels	-0,2
Transport Services	-0,3
Alt. Electricity	-0,3
Clothing & Accessory	-0,3
Apparel Retailers	-0,3
Telecom. Equipment	-0,4
Footwear	-0,4
Recreational Products	-0,4
Brewers	-0,4
Restaurants & Bars	-0,4
Specialty Finance	-0,5
Media Agencies	-0,5
Retail REITs	-0,5
Internet	-0,6
Personal Products	-0,6
Publishing	-0,6
Healthcare Providers	-0,7
Pharmaceuticals	-0,7
Insurance Brokers	-1,0
Trucking	-1,1
Diversified REITs	-1,1
Medical Supplies	-1,1
Investment Trusts	-1,2
Medical Equipment	-1,3
Real Estate Hold, Dev	-1,3
Software	-1,4
Distillers & Vintners	-1,4
Spec.Consumer Service	-1,5
Ind. & Office REITs	-1,5
Electronic Equipment	-1,6
Biotechnology	-1,8
Mortgage Finance	-2,2
Railroads	-2,2
Financial Admin.	-2,4
Toys	-3,3

Of course, we do not want to end today without making any statements about valuation. However, it is difficult to mention a clear result even at the sector level, since there are ETFs and certificates at least at the upper level of the sector classification that we would then be "plugging" indirectly – which (as you may well suspect) would again be tricky in the new world of banking regulation. However, stocks are also divided into industry groups, and there are usually no established financial instruments exactly geared to these groups. So, we have ventured to make statements about which industry group we think is attractive in terms of valuation according to our model. We hope that we thus avoid conflict with the law and are not now standing with one foot in the penitentiary.

But to be quite certain that this aggregation of data is not used against us, we prefer not to reveal here whether these are, for example, European, American, or even global sectors.

Presumably, you would wish us to give you a clue as to which stocks are hidden behind the industrial groups, but you realize we would then run the risk of coming into conflict with the law. That this is an almost Kafka-esque situation, a satirical reality, must be clear to all. We can only hope that policymakers will soon end this surreal episode so we may return to treating our clients as they deserve, as competent citizens and grown adults.

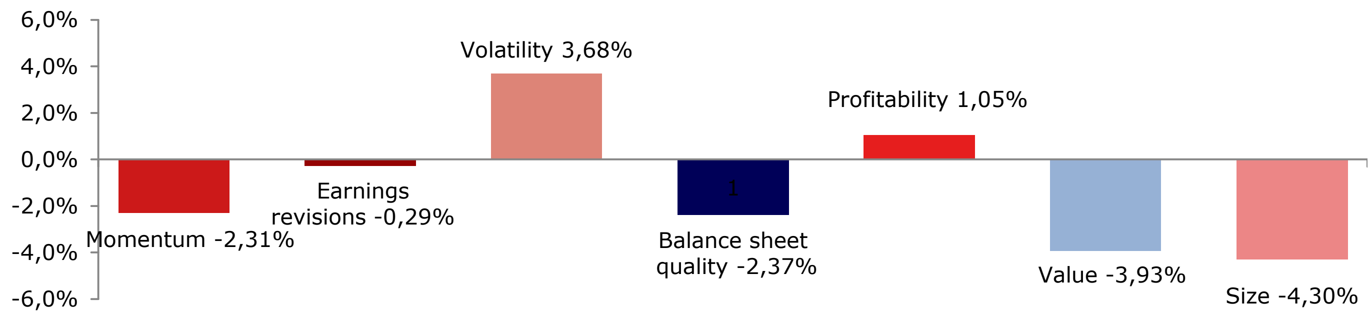
Weekly outlook for November 12-16, 2018

	June	July	Aug.	Sept.	Oct.	Nov.	Release
DE: Consumer prices, m/m – final	0.1%	0.3%	0.1%	0.4%	0.2%		November 13
DE: Consumer prices, y/y – final	2.1%	2.0%	2.0%	2.3%	2.5%		November 13
DE: ZEW economic expectations	-16.1	-24.7	-13.7	-10.6	-24.7	-21.5	November 13
DE: ZEW current conditions	80.6	72.4	72.6	76	70.1	70.5	November 13
EUR19: Industrial production, m/m	-0.7%	-0.7%	1.0%	0.2%			November 14
EUR19: Industrial production, y/y	2.4%	0.5%	0.8%	0.9%			November 14
EUR19: Consumer prices, y/y – final	2.0%	2.1%	2.0%	2.1%	2.2%		November 16
EUR19: Core inflation rate, y/y – final	0.9%	1.1%	0.9%	0.9%	1.1%		November 16
	Q1 2018		**Q2 2018**		**Q3 2018**		
DE: GDP, q/q – s.a.	0.3%		0.5%		-0.2%		November 14
DE: GDP, y/y – s.a.	2.3%		2.0%		1.2%		November 14
EUR19: GDP, q/q – s.a.	0.4%		0.4%		0.1%		November 14
EUR19: GDP, y/y – s.a.	2.5%		2.1%		1.6%		November 14

MMWB estimates in red

Chart of the Week: Factor approach under pressure

Relative performance compared to STOXX Europe 600 Net Return Index
Period 31.12.2017 – 07.11.2018



Investors who have approached stock selection in 2018 based on factor characteristics have had little to be cheerful about so far. Until the beginning of March, most factors managed to outperform the broad index, but the opposite has been the case since then. Political antics like the trade dispute, tough Brexit negotiations, and the Italian government's budget plans are weighing on investor sentiment and causing investment decisions to be made increasingly for behavioral economic reasons rather than based on intrinsic fundamentals. Except the factor portfolios of volatility and profitability, which contain stocks from the STOXX Europe 600 with the lowest volatility and highest profitability, all factor portfolios are lagging in relative terms behind the index, which itself is in the red at -3.4%. For this study, we formed portfolios at the beginning of each quarter for seven established factors (momentum, earnings revisions, volatility, financial quality, profitability, valuation, and size) using the 100 stocks from the STOXX 600 that showed the highest exposure to the named factor at that time. We equally weighted their performance over the following three months and then rebalanced after the end of each quarter. What stands out is that sentiment continues to determine stock price development and company characteristics are playing only a subordinate role. However, experience shows that political stock markets also have short legs in factor investing and as soon as the markets have calmed somewhat, fundamental data will play a role again. However, since it is impossible to forecast which factors will beat the others in the future, it is important to be aware that single-factor investments are always a bet on the future (out)performance of one factor. We therefore recommend selecting as far as possible stocks that exhibit in total roughly equally high exposure to all factors.

Market data overview

Stock marktes	As of 09.11.2018 14:56	Change versus 02.11.2018 -1 week	08.10.2018 -1 month	08.08.2018 -3 months	08.11.2017 -1 year	29.12.2017 YTD
Dow Jones	26191	3,6%	-1,1%	2,4%	11,2%	6,0%
S&P 500	2807	3,1%	-2,7%	-1,8%	8,2%	5,0%
Nasdaq	7531	2,4%	-2,7%	-4,5%	10,9%	9,1%
DAX	11510	-0,1%	-3,7%	-8,9%	-14,0%	-10,9%
MDAX	24221	-1,0%	-2,6%	-9,6%	-10,1%	-7,6%
TecDAX	2672	0,1%	1,0%	-8,7%	6,0%	5,7%
EuroStoxx 50	3221	0,2%	-2,7%	-7,8%	-11,9%	-8,1%
Stoxx 50	2967	0,7%	-1,2%	-5,6%	-7,9%	-6,6%
SMI (Swiss Market Index)	9051	0,7%	1,0%	-1,4%	-2,3%	-3,5%
Nikkei 225	22250	0,0%	-6,4%	-1,7%	-2,9%	-2,3%
Brasilien BOVESPA	86146	-2,6%	0,1%	8,8%	15,8%	12,8%
Russland RTS	1118	-1,4%	-3,4%	0,4%	-2,8%	-3,1%
Indien BSE 30	35159	0,4%	2,0%	-7,2%	5,8%	3,2%
China Shanghai Composite	2599	-2,9%	-4,3%	-5,3%	-23,9%	-21,4%
MSCI Welt (in €)	2082	2,9%	-1,7%	-1,8%	3,7%	4,6%
MSCI Emerging Markets (in €)	994	0,3%	0,9%	-6,0%	-10,6%	-9,4%
Bond markets						
Bund-Future	159,37	-26	142	-274	-403	-231
Bobl-Future	131,28	-3	76	-61	-71	-33
Schatz-Future	111,94	-3	14	0	-36	-4
3 Monats Euribor	-0,32	0	0	0	1	1
3M Euribor Future, Dec 2017	-0,31	0	-1	-2	-3	0
3 Monats $ Libor	2,61	2	20	27	120	92
Fed Funds Future, Dec 2017	2,29	1	2	6	60	0
10 year US Treasuries	3,23	1	0	27	90	82
10 year Bunds	0,43	-1	-11	3	10	1
10 year JGB	0,13	0	-2	1	10	8
10 year Swiss Government	0,01	0	-6	6	14	14
US Treas 10Y Performance	550,58	-0,2%	0,5%	-1,7%	-5,7%	-5,3%
Bund 10Y Performance	614,56	-0,2%	0,9%	-0,4%	0,3%	1,2%
REX Performance Index	483,82	0,0%	0,6%	-0,1%	-0,3%	0,7%
US mortgage rate	0,00	0	0	0	0	0
IBOXX AA, €	0,87	1	-3	14	27	19
IBOXX BBB, €	1,82	-1	5	27	75	59
ML US High Yield	6,90	-9	24	38	76	75
JPM EMBI+, Index	784	0,0%	0,3%	-1,0%	-4,7%	-6,2%
Convertible Bonds, Exane 25	7223	0,0%	-1,3%	-2,2%	-2,6%	-2,4%
Commodities						
CRB Spot Index	416,23	-0,8%	-0,3%	-2,0%	-3,6%	-3,8%
MG Base Metal Index	304,19	-1,8%	-2,8%	-3,6%	-11,7%	-15,2%
Crude oil Brent	69,74	-4,2%	-16,7%	-3,7%	9,4%	4,7%
Gold	1210,91	-1,7%	2,1%	0,0%	-5,8%	-7,1%
Silver	14,46	-2,4%	1,2%	-6,0%	-15,9%	-15,0%
Aluminium	1979,50	1,0%	-4,0%	-5,0%	-5,3%	-12,3%
Copper	6172,50	-2,3%	0,0%	0,5%	-9,6%	-14,4%
Iron ore	75,01	2,9%	8,3%	9,0%	19,8%	5,2%
Freight rates Baltic Dry Index	1231	-15,5%	-19,5%	-27,8%	-17,2%	-9,9%
Currencies						
EUR/ USD	1,1348	-0,6%	-1,1%	-2,1%	-2,1%	-5,4%
EUR/ GBP	0,8706	-0,8%	-0,8%	-3,3%	-1,6%	-1,9%
EUR/ JPY	129,23	0,3%	-0,7%	0,4%	-1,8%	-4,3%
EUR/ CHF	1,1418	0,0%	0,2%	-1,1%	-1,4%	-2,4%
USD/ CNY	6,9548	0,9%	0,4%	1,7%	4,9%	6,9%
USD/ JPY	114,07	0,8%	0,7%	2,8%	0,2%	1,2%
USD/ GBP	0,77	-0,5%	0,3%	-1,1%	0,5%	3,8%

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