

Theory and Practice of Franchise and Intrinsic Value Analysis

- **ValuAnalysis Ltd specialises in Franchise and Intrinsic Value analysis.** Its core team has used residual income models to value and select stocks for more than 25 years. This team has designed and implemented various models such as CROCI (Cash Return on Capital Invested), the successful cash model used by Deutsche Bank, or eRoC (economic Return on Capital), a stock selection process used by a Swiss asset manager.
- **This introduction documents ValuAnalysis' approach to intrinsic value.** The basis is an unwavering practice of Residual Income (RI) models. RI models are strictly equivalent to the more common discounted cash flow models, but their mathematical formulation isolates net (economic) assets, which we find invaluable. Focusing the analyst's attention on capital invested opens fruitful discussions on replacement value and capital consumption, concepts of immense importance for shareholders. RI models also have the added benefit of making the opportunity cost of capital explicit in its formulation, and lends itself well to Intrinsic Value analysis.
- **Intrinsic Value was introduced by Benjamin Graham in 1962.** It is defined as the sum of Replacement Value (what it would cost to rebuild the firm's assets today) and Franchise Value, or the economic value of a firm's ability to sustain its competitive advantage via supra-normal returns, i.e. returns above the cost of capital. Applying these models requires a fair amount of financial sophistication and insight, but there is little doubt over their benefits to investors.
- **ValuAnalysis uses multiple derivatives of this legacy,** including its proprietary Three Sources of Value approach, which breaks down a firm's value into Replacement, Franchise and Growth. It prefers to be "Opinionless" about the future, meaning that its judgement on share prices is based on what is discounted by investors in that share price, rather than on a view of future operating parameters, an exercise which is often random and in any case already well-rehearsed by others.

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Residual Income Models and Intrinsic value

The term “intrinsic value” was first applied to financial analysis by Benjamin Graham in 1962. His original formula¹ may look a bit bizarre today, but he and his followers subsequently amended and enhanced it. Intrinsic value remains less “mainstream” than alternative (e.g. “DCF”) models, despite providing a superior insight into value creation, in our view.

The marvellous insight of Residual Income Models

Today, a textbook Intrinsic Value (IV) formula looks like this:

$$IV = BV_0 + \sum_{n=1}^{\infty} \frac{(RoE_n - d)BV_{n-1}}{(1 + d)^n}$$

The model is, in effect, a **Residual Income Model**, an alternative but less utilised way to express the value of a discounted stream of free cash flows. “R” being the cash return (or “cash yield”), “NA” net assets and “d” the discount rate, the simplest discounted cash flow model (DCF) will value a firm as:

$$DCF \text{ defined Value} = \frac{R \times NA}{d}$$

In turn, the simplest residual income model (RI) will express it as:

$$RI \text{ defined Value} = NA + \frac{(R - d) \times NA}{d}$$

The two being strictly equivalent², if R is defined as:

$$R = \frac{FCF}{NA_e}$$

In words, a residual income model defines Intrinsic Value as the sum of Net Assets (BV_0 in the textbook formula first shown) and a discounted stream of “residual income”, which we call “economic profits”, defined as cash profits less the opportunity cost of capital. Defining market value as “asset + economic profits” offers in our view a superior insight because, unlike in a discounted FCF model, where they are only implicit:

- It makes “NA”, or “economic assets”, conspicuous, forcing an explicit analysis of capital invested, and therefore of capital reinvestment (“CAPEX”).
- It directly addresses the cost of capital in the calculation of economic profits.

With the residual income approach, it is possible to replicate accurately the thought process of an entrepreneur taking real (physical) investment decisions: what capital to commit where, at which cost, and for which return.

*Residual income models
talk the same language as
entrepreneurs*

¹ Intrinsic Value = EPS x (8.5+2g)

² This is true if net assets (NA) are depreciated according to the Hotelling principle of economic depreciation, noted NA_e , see more on the next page.

From Accounting to Economics

However, RI models will not work well with unadjusted accounting information. They require data adjustments which are not trivial and may explain why residual income models are reserved for specialised research with in-depth knowledge of the accounts. The challenge and difficulty is to move the representation of the firm away from the accounting world and transform the data into *economic* aggregates. For instance:

- The corresponding economic aggregate to book value is economic capital invested, or what generates “cash from operations”, in other words the source-aggregate of the firm’s economic rent. The fact that this capital invested may, or may not be recorded in the books (the accounts) of the company is irrelevant.
- The criterion for inclusion is the **economic** nature of the investment, not its accounting format: it must be an asset, i.e. be producing cash flows during an identifiable *economic life* even in the absence of maintenance capital spending. As a result, goodwill is excluded, R&D spend is capitalised, brand values and other “concessions” are included but always depreciated etc.
- Another area of adjustment is depreciation, which must also be “economic”. Economic depreciation is the recognition of a loss of cash flow through obsolescence and is not linear. Harold Hotelling described the theory of economic depreciation in 1925³.

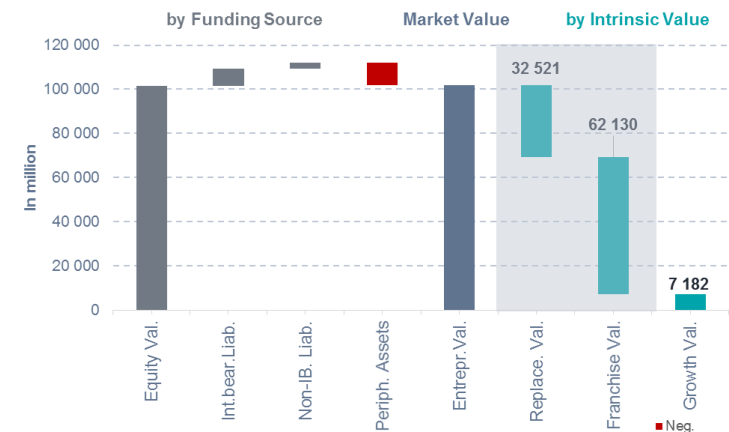
³ A General Mathematical Theory of Depreciation, Journal of the American Statistical Association, 20:pp. 340-353.

The Three Sources of Value

Once these adjustments are completed, the market value of a firm can be analysed beyond the traditional funding sources breakdown, and also broken down by (market-implied) intrinsic value.

Market Value by Funding sources is the traditional breakdown of the Enterprise Value, broadly, market capitalisation plus interest-bearing and non-interest bearing liabilities minus non-operating assets (see left-hand part of the following chart). This preliminary exercise is important on two fronts. The breakdown reviews (and attempts to capture) all liabilities, including the hidden ones. And, crucially, it gives an objective market value of the Enterprise.

THE THREE SOURCES OF VALUE



Accounting information is not designed for investors. Financial models, and especially RI models, only make sense if fed with “economic” information

The Three Sources of value bring insights into the level of franchise of a firm, as well as its competitive advantage period, as seen by investors

Market Value by Intrinsic Value (the right hand side of the previous chart) is a more dynamic and analytical breakdown, analysing the market price of an asset (a firm) according to Ben Graham's principles of Intrinsic Value described above, e.g. as "asset + discounted Economic Profits (EP)". ValuAnalysis has developed the model further by breaking down "discounted EP" into two sub sets, Franchise Value and Growth Value. The former is calculated with a normalised (or "sustainable") level of return, at zero growth. The latter discounts growth expectations.

Replacement Value is the economic version of net assets in the intrinsic value calculation. "Assets" include all the economic capital of the firm, tangible or intangible, on or off balance sheet (we happily capitalise expenses with asset characteristics, such as R&D), but items which are not operating (such as long-term investments, which we treat as cash-equivalent) or have no economic meaning (such as goodwill on acquisitions) are not taken into consideration. These assets, identified at cost, are inflated and depreciated according to the Hotelling principle.

Harold Hotelling defines economic depreciation as the contribution to a virtual sinking fund "invested" at the Internal Rate of Return (IRR) of the firm, such that at the end of the asset life, the original gross amount of capital invested is reconstituted. This means that depreciation cannot be linear, as this charge depends on the IRR (the cash return) of the firm and therefore its measure depends on the age of the assets. An early depreciation charge will have more time to accrue and will require a smaller contribution than a late one. It is important to realise that all book values defined by an accounting (linear)

depreciation fail to measure accurately the economic decay of the underlying assets.

Franchise Value is a classic discounted stream of Economic Profits (or "EP"), but with two major amendments: it is not a perpetuity, and it is calculated with the *sustainable*, not the actual cash return. Negating the benefit of perpetuity to the valuation of the franchise is beneficial to the analysis because it invites a discussion on the "fade", or the rate of decay of the cash rent, and on the firm's Competitive Advantage Period (or "CAP"). These points are often ignored by traditional financial analysis but evidently paramount to management. As for the second point, there is sadly no objective measure of sustainability, and it needs an analytical input on our part. We usually take an appropriate historical average to approximate this measure.

Growth Value, which we could have called Surprise Value, is a residual, or "the part of market value not justified by assets or discounted sustainable EP"; it is simply calculated as Market Value minus Replacement Value minus Franchise Value. Even though this aggregate is a residual, it is as worthy of the same assessment and analysis as the other two. Discounted EP flows (Franchise Value) are calculated at zero growth, except for the maintenance reinvestment in the existing assets. It is therefore legitimate, for some companies, to carry a positive Growth Value, as it represents the expected discounted stream of EP from (1) further investment above maintenance capex and (2) any excess return above the sustainable level. This aggregate is also an overall gauge of how much the market believes in our Intrinsic Value calculation; a very positive Growth Value would indicate a much greater level of optimism on sustainable rent or Competitive Advantage Period, whilst the reverse would signal a

distrust in these numbers. Both would command a detailed investigation.

The Opinionless Analyst

The most common way to hold a view on a share price is to have an opinion on the future operating parameters of the firm (growth, margins etc....) and to discount them back to a present value. Partly due to our natural proclivity towards being contrary, and largely because we think that it makes more sense, we prefer to use the symmetrical approach, which is to extract the embedded operating assumptions of the consensus view out of the share price, and to confront these parameters with historical performance. This requires more sophisticated financial engineering and less ego, both with which we feel at ease, to the point of calling ourselves "Opinionless Analysts". The first approach is akin to an open question like "what will be this firm's

margins in five years?" Given the random nature of human, i.e. economic behaviour, the outcome of this question carries such a large standard deviation that it is almost random. It is not by chance that the peerless Nassim Taleb has called his flagship book "Fooled by Randomness". The second approach implies a more precise question: "given that this firm has achieved an operating margin of 12% historically, discuss the market-implied assumption of 15% going forward". Note that extracting this 15% figure requires some heavy duty financial modelling, and that answering the question equally requires a great deal of analytical work, and a fair amount of uncertainty, too. Yet we find this approach more insightful and unquestionably beneficial to those who think that the right question always precedes the right answer. Asking those, we think, is the prime quality of a good financial analyst.

Identifying an Economic Franchise

ValuAnalysis pursues a two-pronged approach in its investment research: a focus on the “value factor”, complemented, “enlightened” by a myriad of other, more analytical factors: level of rent (or free cash flow asset yield), capital consumption and intensity, competitive advantage, fade, growth etc... The goal is to identify the Franchise Holders among the available investments in the quoted markets.

The classic earnings multiple-focused selection process is not discriminating enough

We will never argue against buying low and selling high multiples, nor will we abandon the benefits of a systematic approach to investment analysis; combined, they usually go a long way. But an investment strategy focused solely on multiples, by definition, is *price* driven before it is *analytical*: the market price gives the level of the multiple, and therefore the signal (to buy or sell). Complex issues are collapsed into a single level of multiple, which we think is not discriminating enough.

By way of illustration, the table (right) breaks down the “PE” ratio⁴ of two US and two European stocks into its two sub-components, asset multiple and asset yield⁵.

	McDonald's	American Water Works	Astra-Zeneca	BASF
Normalised Economic PE	26.7x	26.7x	26.6x	26.7x
Asset Multiple	3.3x	1.2x	3.4x	1.5x
Asset Yield (norm. FCF rent)	12.4%	4.5%	12.8%	5.6%

Source: ValuAnalysis

These four companies all trade on the same “PE” ratio, which stands at a small discount to the market. Therefore, a standard multiple-focussed investment process would consider buying all four of them, on the basis that they all have a higher expected return than the market. Note, incidentally, that we see no value in developing a cost of capital argument here. For a start, we calculate these ratios on an unlevered basis, and believe furthermore that global companies using a normal level of debt all have, broadly, the same access to capital at more or less the same cost, such that they can all be pitched against a global

⁴ We call it “normalised economic PE” because it is calculated with corporate economic data, such as free cash flow rather than profits, economic capital rather than accounting book value, and averaged (“normalised”) over a cash flow cycle.

⁵ An accounting PE ratio is the price to book multiple divided by return on equity. Its economic version divides a net economic asset multiple by an asset yield, called here “normalised operating free cash flow rent”, or normalised operating FCF divided by net economic assets.

expected return, which we think is between 5% and 5.5% in real terms.

Yet disentangling the PE ratio quickly opens a Pandora's Box.

McDonald's and AstraZeneca enjoy a low double-digit FCF rent clearly above the cost of capital, in line with other consumer and pharmaceutical businesses. They own some sort of *economic franchise*, or the ability to sustain a FCF asset yield above the cost of capital, a type that we call "Franchise Owners". BASF, the large German chemical company, is a notch above the cost of capital, and the US water utility is slightly under. Again, bang in line with the fact that these last two businesses have a high capital intensity.

If they are so different, why are they on the same PE multiple?

In effect, a simple value approach solely based on multiples disregards all the above analytical input; the final say here lies with the asset multiple of the firm, i.e. the valuation. So long as the latter is adequately pitched, i.e. is commensurate with the current return, there is no discrimination between a 12.4% rent business and a 4.6% rent business: the valuation equalises everything. More precisely, there is an implicit assumption of **symmetrical fade**: it is assumed that both will reach the cost of capital at the same rate, and, therefore, the initial level of return is irrelevant and can be ignored. The limits of the approach are conspicuous.

An economic franchise is the economic value of a firm's ability to generate and sustain a FCF asset yield above the cost of capital

From a Multiple-focus Selection to Franchise Analysis

In the classic Intrinsic Value framework originally advocated by Benjamin Graham, the value of a firm is defined as Replacement Value (of *economic* assets) + Franchise Value. The latter is a perpetuity of "Economic Profits", defined as a level of sustainable "Economic Rent" less the cost of capital. The actual level of the rent, or FCF asset yield, has therefore always been identified, in the literature, as essential to determine the value of an enterprise. We think that it is possible and desirable to systematise its analysis, because we believe that **the discriminating nature of the level of rent is increasing**. This could be due to a rather unconventional succession of major global events which has had a profound and mainly positive effect on corporate profitability:

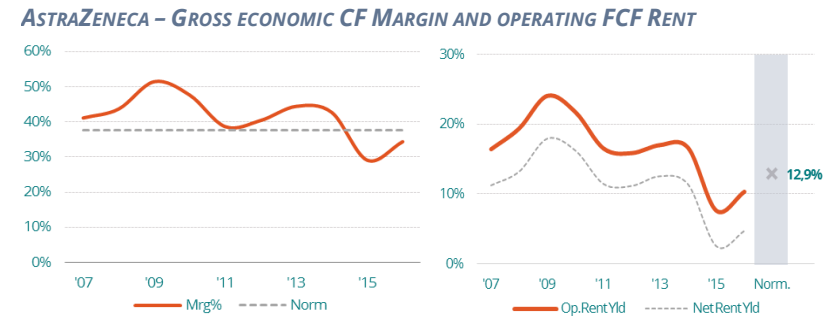
- The disappearance of inflation (1981 onwards),
- The emergence of a once in a century productivity revolution (1995 onwards),
- The emergence of major new economies (e.g. China),
- The collapse of the real cost of debt (2008 onwards).

As bottom-up analysts, we would not wish to take a view on the continuation or the reversal of these mega-trends, but we do have a view on their long-term impact on corporate profitability, sustainability and fade rates. We believe that a number of Franchise Owners have probably benefitted from an entrenchment of their position, thanks to a more global footprint. On the other hand, we suspect that (surviving) lower rent businesses are now facing a longer period of upwards normalisation of their rent, which puts them at a disadvantage. In short, if after all these years of rather friendly winds, they still do

not produce enough free cash flow, it is legitimate to wonder if they ever will.

Taking our examples in turn, it is clear that the level of **sustainable economic rent** directly influences the strategic behaviour of the company, its capital consumption and allocation, thus indirectly its return to shareholders:

- **American Water Works**, an otherwise perfectly good company, has nowhere to go for an investor. Water distribution is, inherently, a cost of capital business, as all the cash generation, and more, is ploughed back into the vast economic assets. The multiple here should simply reflect the cost of capital, which it roughly does.
- **BASF** is in a slightly more flexible position, being less capital-intensive and more global by nature, but the merger between Dow Chemicals and Du Pont suggests that the industry may need defensive moves to consolidate its returns.
- **McDonald's** has lived through various fortunes historically, but, on average, has protected its level of cash return fairly well. It could probably be considered as the most durable and resilient of all four, and a genuine Franchise Owner.
- **AstraZeneca**, with the highest rent, is also a Franchise Owner, but of a different kind; it illustrates that **a higher rent does not necessarily equal a more sustainable business**. Like almost any other pharmaceutical company, AstraZeneca is facing a vicious spiral of price pressures which has collapsed its cash flow margin and operating cash return, as shown by the following two charts:



Source: ValuAnalysis

In a context of expensive equity markets, or low risk premium, we believe that it is particularly important to focus on such issues as the sustainability and resilience of the rent. In the examples above, not only the structural economic characteristics are very different, but the future path will be too. Some will see the pharma industry as terminally doomed or, on the contrary, at the end of a transformation process taking it from a high margin, high volume business to an ordinarily competitive consumer business. Some will expect the median return of the global chemical sector to rise after a wave of consolidation, others will consider that the emergence of new economics will put a lid on these returns. Elsewhere, the business model of McDonald's will be seen as unsustainable, given the general drive for healthier food. None of this suggests that these four stocks should trade on the same multiple! The level and resilience of the rent, and therefore the emergence, sustainability or disappearance of the franchise will be a major discriminating factor in the context of a normalisation of the risk premium, we think.

As a result, *ValuAnalysis* believes that the most rewarding effort is to focus on the Franchise Owners and to investigate where the market under or over-estimates their compounding power, their resilience, or their ability to reinvent themselves. But, as the next section explains, not at any cost of entry.

Valuing an Economic Franchise

The public stock market is not overly generous; when tapped, the barrel of stocks labelled “Franchise Owners” sounds hollow. There is, probably, more than a trickle of medium-sized companies of this kind, but for those investors in need of liquidity and size, this quest is a struggle: Franchise Owners are in no urgent need of capital and can just as happily live in private hands.

Wonderful Company, Ugly Price

This is, of course, an exaggeration. A number of such companies do require some access to public markets for various reasons; maybe because they act as an avid consolidator (i.e. consuming a lot of capital), or maybe because the addressable market that they covet is too vast for their own means. And, in truth, public markets still keep some large gems in their midst, that Warren Buffett has not yet snapped up. On our count, certainly more than, say, 150 large companies worldwide. But possibly less than double that amount.

Like everything else rare, the inevitable corollary is that these companies, on average, are expensive. Sometimes exorbitantly so. Here is a random, non-exhaustive list of twenty-odd brilliant companies, from all regions and sectors:

Keyence (<i>Japan</i>)	Intuitive Surgical (<i>USA</i>)	Dassault Systèmes (<i>France</i>)
Coloplast (<i>Denmark</i>)	Thermo Fisher (<i>USA</i>)	Assa Abloy (<i>Sweden</i>)
Rentokil (<i>UK</i>)	Inditex (<i>Spain</i>)	Alphabet (<i>USA</i>)
Reckitt Benckiser (<i>UK</i>)	Dentsply (<i>USA</i>)	Medtronic (<i>USA</i>)
William Denant (<i>Denmark</i>)	Givaudan (<i>Switzerland</i>)	Smith & Nephew (<i>UK</i>)
Stanley Black&Decker (<i>USA</i>)	IFF (<i>USA</i>)	Electronic Arts (<i>USA</i>)
SAP (<i>Germany</i>)		

Sadly, not a single one currently trades below **38x** normalized unlevered net FCF. That’s an expected return of 2.6% per annum (at zero growth). Objectively an expensive price tag. Do investors actually need to care about the price of these “good to fabulous” companies? In no more words than needed, simply “yes”. And in a few more, below.

Multiple Dementia

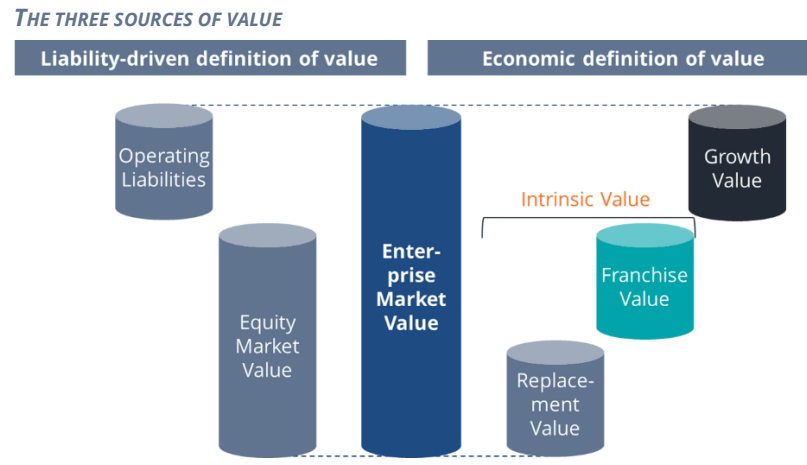
Towards the end of the 1990s, Nokia was dominating the mobile handset market; it had a global market share of 38% of what was probably **the** fastest growing sector in the world: mobile telephony. The firm had a market capitalisation of some EUR 280bn at the peak of its glory; there are still only 14 companies in the world today with a larger market price. In the space of the following 12 years, this market value has been reduced by **97.5%**, to ca EUR 7bn.

Between March 1997 and July 2000, we calculate that the average ratio of Enterprise Value to unlevered last 12 months FCF was 95x, with the lowest number over the period being 51x. Going so far back, these multiples might be approximate, but not enough to prevent us from labelling them “insane”. In our view, the problem is not so much that Nokia’s management failed to foresee

Samsung and Apple coming after their handset division; it is that investors did not apply a reasonable FCF multiple *in anticipation that this might happen*. Forgetting to apply a “margin of safety”, as Benjamin Graham used to call it, is a cardinal investment sin, we think.

Analysing the Three Sources of Value

We have explained earlier how we calculate our Three Sources of Value breakdown, which analyses the market value of a firm from an economic point of view:



Source: ValuAnalysis

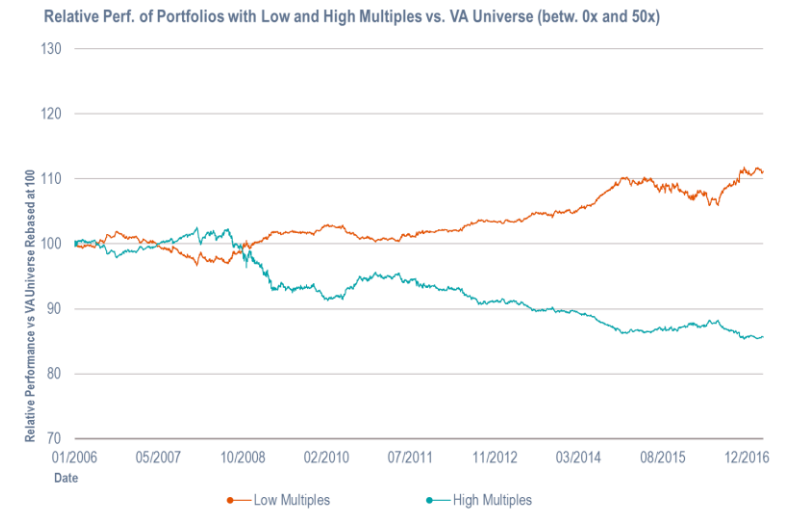
- **In Replacement Value** (the economically depreciated value of net assets) we look for efficient users of capital, growing their capital within their means. Metrics such as Asset turn (Revenues / Assets), Asset Age / Life and Replacement Value as a % of Enterprise Value are all important.

- **In Franchise Value** (here not a perpetuity, as in the original model, but the net present value of a market-implied *fading* return), we only look at companies that can sustainably generate an economic rent above the cost of capital (5%). Including some margin of error, this would translate into a normalised FCF to net economic assets (“the rent”) of 7% or above. We look at metrics such as Operating (after maintenance CAPEX) and Net (after full CAPEX) Rent Yield, the growth profiles of Sales and Free Cash Flow, and EBIT stability. Ultimately, we are interested in as big and *stable* a Franchise Value as possible, in % of Enterprise Value.
- **In Growth Value** (calculated as a residual - market value less replacement and franchise values), conversely, we look for the lowest possible number, or for the fastest fading profile. This is because Growth value represents the sum of the market’s expectations of future growth and derived “abnormal” margins; the lower, the better.

Paying the right Price

If the expected market return / cost of capital is 5%, then the corresponding normalised operating FCF multiple should be 20x (1/5%), at zero growth. Taking growth in capital invested into consideration, we think that the maximum investable normalised *net* FCF multiple should be in the 25x to 28x bracket. This hurdle is relatively severe in the current market context (say the last decade), but quite generous over a longer time frame. We have to accept this discomfort, as ultimately, we can calculate but cannot control, forecast or even model the equity premium that investors choose to use. Nevertheless, this hurdle has proved particularly effective in the past decade, as the next chart (on the right) shows. A systematic investment in companies valued at or below 25x normalised net FCF is able to do considerably better than buying into the rest of the market.

RELATIVE PERFORMANCE OF PORTFOLIOS



Source: ValuAnalysis

Selecting an Economic Franchise

It does not take a lot out of any ValuAnalysis model to find out that Apple is a Franchise Owner. But so is Safran, the French plane engine maker, and here stop the similarities. Not only the intrinsic characteristics of franchise ownership are diverse (Apple's cash rent is in the mid-40s, Safran's is in low double digit territory), but the market assessment, and therefore the valuation of this franchise can be dissimilar. Franchise Owners needs a typology, failing which, the same problems as buying indiscriminately low PE companies might resurface.

A Tough Selection Process

There is more to identifying a Franchise than just observing the level of rent, which technically has to be above the cost of capital. Indeed, a Franchise needs to be value accretive, but sustainably so. Furthermore, the acquisition price needs to be right and capital consumption needs to be shareholder-friendly. We have designed a protracted process grouped into four main areas of our research: Franchise, Capital Consumption and Growth, Valuation and Risk.

- We look for companies with resilience and sustainability, with metrics such as the Operating Rent Yield, the growth profiles of Sales and Free Cash Flow, and EBIT stability. Ultimately, we are interested in using a hurdle for Franchise Value as a % of Enterprise Value.
- We look for efficient users of capital, preferably growing their capital base above market levels. The amount of Revenues per unit of Assets, Asset Age / Life and Replacement Value as a % of Enterprise Value are all screening items.
- We have explained why we consider 25x Normalised net FCF to be an important hurdle, not to be trespassed without due

consideration. We also look for companies where the latest Rent Yield is higher than the sector median and the Asset multiple is lower than the sector median.

- Companies with a high risk profile, whether measured by financial debt or higher share price volatility, are either excluded or face tougher hurdles for inclusion. We also take into consideration the extent of Peripheral Assets as a % of Total Assets.

A typology of Franchise Owners

We identify three types of Franchises: Core, Contentious and Emerging. All the stocks on the lists are genuine Franchise Owners and qualify as "investable", i.e. clearing all or most of the hurdles above. But the *probability* of sustainability of this franchise is not the same, either intrinsically or as priced by the market.

A Core Franchise is a franchise with little dispute, both from competitors or from investors. Coca-Cola may qualify as the quintessential Core Franchise. Core Franchise Owners tend to cluster between a rent of 10% and 20%, and to be at the top end of the valuation range that we accept. The median rent of our list is 12% and the median multiple is 22x. Core franchise owners are

Intrinsic Value provides economic concepts understood by investors and entrepreneurs alike, because it deals primarily with capital allocation

necessary in any balanced portfolio and, by definition, the constituents of this list are not always very surprising.

An Emerging Franchise is still, by and large, untested. It often stems from an unusual business model (Las Vegas Sands runs resorts in the US and Macao), or at least not mainstream. It could be a niche business which will require a lot of transformations to become truly dominant (Amadeus), or a genuinely emerging business (Vestas Wind Systems). Typically, Emerging Franchises trade on similar multiples to Core, but generate a higher rent.

A Contentious Franchise is a franchise under threat, and, as such, a higher risk / higher reward proposition. Uncontentious franchises are an easy call; there are quite possibly less than one hundred such stocks in the world, and most of them are well identified but, in the context of expensive equity markets, demanding in terms of valuation. Unassailable franchises are even rarer, and therefore even more expensive. Apart from these aristocrats, a franchise is always contentious, almost by definition, i.e. naturally disputed by new entrants, competitors, as well as investors. In the latter case, and usually after what could be described as a franchise accident, investors will remain in distrust of the firm by applying a very short fade to their future cash flow profile. A lot of such examples can be found in the pharmaceutical industry, with the prototype being maybe Gilead. Typically, these stocks will trade on an optically low spot multiple, certainly lower than Core or Emerging Franchises, and the difficulty is to determine the level and resilience of their *normalised* level of return. And so, perhaps surprisingly to some, we would classify Apple as a Contentious Franchise, whilst Safran is a Core Franchise.

A Highly Practical Exercise

Intrinsic Value Analysis is a highly practical exercise, providing a common economic language and concepts understood by Investors and Corporate Management teams alike. Specifically, ValuAnalysis uses its proprietary residual income models and research to analyse and select stocks and build portfolios with the objective of generating outperformance ("alpha") in the long-run.

To that end, ValuAnalysis Ltd has designed various investment research products aimed at identifying single stocks with interesting specific franchises, as well as lists of stocks around its concepts of "core", "contentious" or "emerging" franchises.

- **ValuFocus** is a ValuAnalysis publication designed to select a core list of global companies with remarkable franchise characteristics and attractive valuation. It is not, as such, "a portfolio", but, rather, a high conviction list of companies with superior economic characteristics. We expand in this publication on the distinction between "core franchises", such as Microsoft or Intel, "emerging franchises" (typically smaller and less well established businesses) and "contentious franchises". In the latter case, we are interested in situations where we think that the market is too aggressive in writing off a franchise which we still identify as valuable.
- **Running the Numbers** is a One Page summary of all aspects of a firm's Intrinsic Value, including asset breakdown, the Three Sources of Value, economic margins, asset intensity, historical and implied free cash flow yield and free cash flow multiples. We show in the appendix three examples of *Running the Numbers*; Alfa Laval, Pfizer and Intel, published on June 12th 2017.

- Interesting investment ideas that stem from *ValuFocus* and *Running the Numbers* are expanded into detailed reports written by **The Opinionless Analyst**. *The Opinionless Analyst* publications are in-depth analyses of the implicit assumptions hidden in the share price of major global companies. *The Opinionless Analyst* extracts market-implied cash returns,

margins or free cash flow generation from the share price and explores questions arising from the firms' Intrinsic Value.

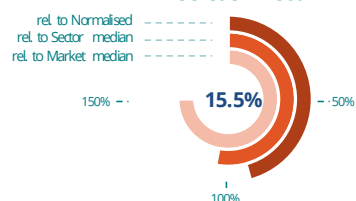
Appendix: Running the Numbers

The following three Running the Numbers pages were published on June 12th 2017. We have deliberately not updated them here to illustrate the long-term nature of Intrinsic Value analysis, which is designed to pick up strategic issues around capital allocation, capital consumption, marginal return on capital and how the market values them in aggregate.

- ALFA LAVAL p. 18
- PFIZER p. 20
- INTEL p. 22

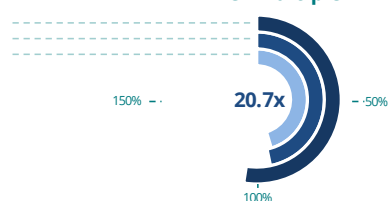
ValuFocus List: Core Franchise

Free Cash Return



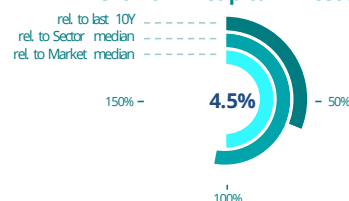
	Operating	Net
Last FY	15.5%	15.3%
Normalised	17.0%	16.4%
Mkt implied	8.8%	

FCF Multiple



	Operating	Net
Last FY	20.7x	22.3x
Normalised	19.8x	20.5x

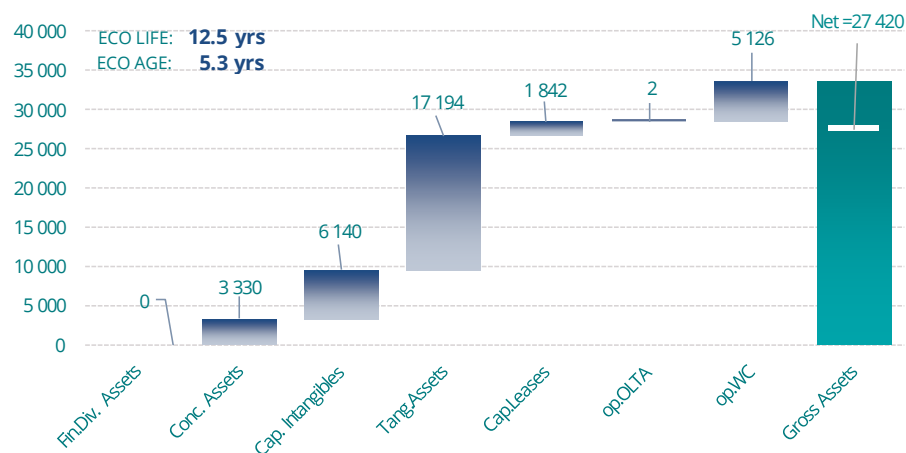
Growth in Capital Invested



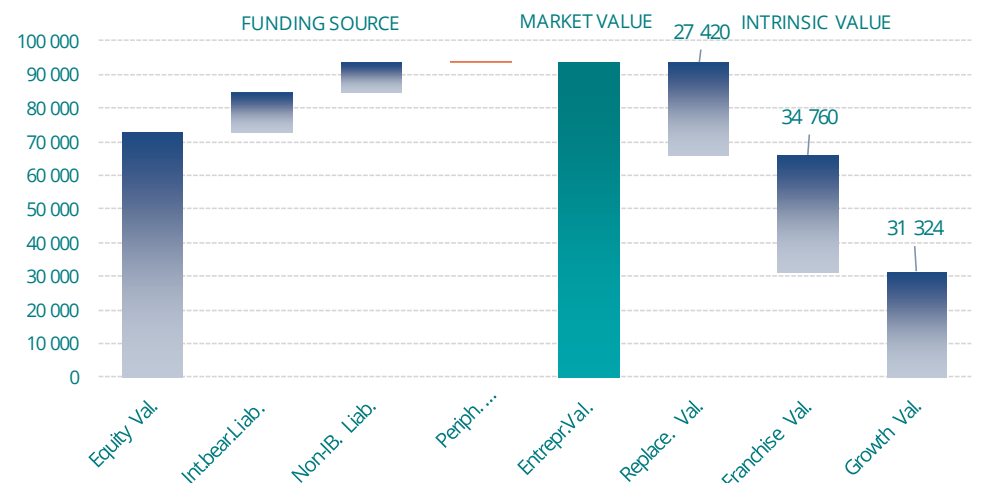
	Asset Growth
Est. Trend	4.5%
Last 10Y	7.2%
Implied over CAP	4.5%

Alfa Laval has been running the same business, mostly profitably for 130 years; this sustainability is the quintessence of a core franchise owner. We are surprised that the market is not more enthusiastic about its shares, which are trading on 22.3x last reported net FCF. Considering the steadiness of the firm and the context of expensive equity markets, this is almost cheap. We are not quite sure what spooks investors. Yes, the firm is a consolidator, thus acquisitive and not afraid of leveraging (modestly) its balance sheet. Yes, the firm is involved in certain cyclical businesses, and yes, trend growth is not that high. But it is a remarkable compounder and its rent level is in a sweet spot: high enough to support investments, not high enough to attract too many aggressive competitors.

Asset breakdown (gross - SEK 33.6 bn)



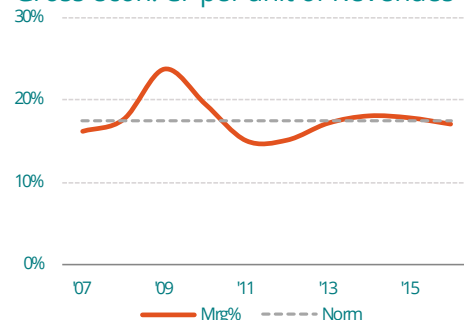
The Three Sources of Value (SEKm)



Alfa Laval is asset "heavy", in that the bulk of its capital employed is absorbed in tangible assets. We identify about SEK 3.3bn of concession assets to be included in economic capital, which represent trademarks and patents. The firm only expenses about 2.5% of revenues in R&D, which we capitalise. The liability breakdown of Market Value shows a modest but noticeable level of financial leverage, which we prefer to a full equity funding. The SEK 35bn Franchise corresponds to an average 8.8% operating rent (op.FCF to net assets) over the fading period. The fade rate is 4.6%, which is objectively low but not for a 130 year-old firm with entrenched market positions in areas of strategic importance (food, pharma, energy or

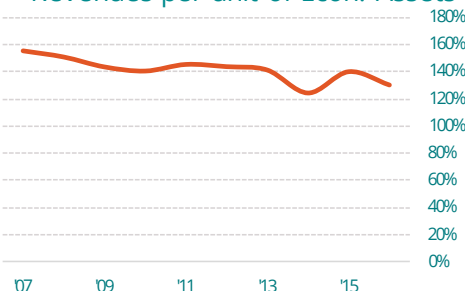
Economic Margin

Gross econ. CF per unit of Revenues



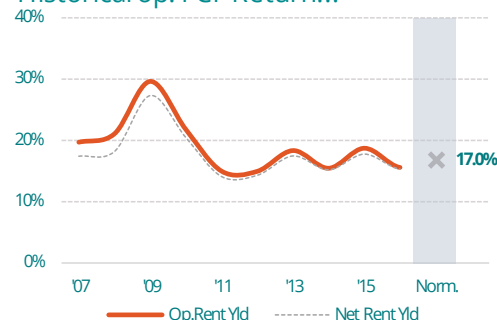
Asset Turn

Revenues per unit of Econ. Assets

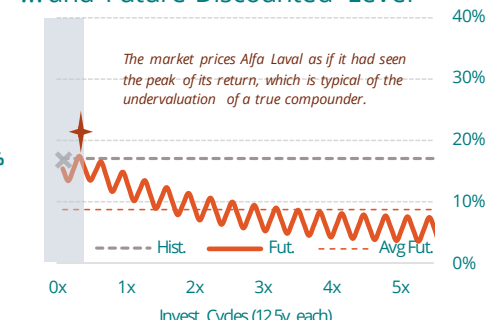


Op.FCF Return: Last 4Y: 17% | Next 4Y: 15.6% (Implied)

Historical op. FCF Return...



... and Future Discounted Level



Alfa Laval is probably more cyclical than some people think, and less cyclical than the charts above suggest. There is a real exposure to the investment cycle, and order books can be reported in free-fall at the trough. But the firm has historically exhibited a good anticipation and management of the business cycle, and the large (positive) wobble in 2009 is a misleading representation, as this was in fact a tough year for revenues and order intake, more than compensated by an aggressive NWC management. Overall, we believe that our normalised gross cash flow margin of 17.5% (first chart) is representative of the mid-cycle profitability of the firm. Note that asset intensity is high and on the rise; a decade ago, Alfa Laval was able to turn over 1.6x its assets per annum, a figure that has declined to 1.2x only. Overall, we think that Alfa's normalised rent is around 17%. The way in which Alfa Laval's valuation can be expressed in a fade (fourth chart above) is typical of a compounder: the market assumes that peak returns will not be seen again. Despite that fact that a 4.6% fade rate is slow, the pre-reversion period (before the fade starts, i.e. before the firm needs to give up some excess return to competitors or clients) is only 5.5 years and probably too short. Given the market shares that Alfa Laval controls (30% world-wide in two of its three divisions), this pre-fade period could just as well run into decades.

Competitive Advantage

Fade Analysis

FADE RATE:	4.6%
FRANCHISE VALUE WITH NO FADE:	63 203
IN % OF FADING FRANCHISE VALUE:	181.8%

Op. Economic Profits (SEKm)

Actual & Discounted



Selected Alternative Investments Within Same Sector

Similar FCF Ret. to Alfa Laval

Snap-on Incorporated (21.9x, 17.7%)
WABCO Holdings Inc. (26.1x, 14.3%)
Wärtsilä Oyj Abp (28.3x, 15.7%)
Pentair plc (28.7x, 16.3%)
Fanuc Corporation (29.4x, 13.1%)

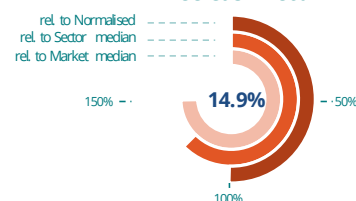
Similar FCF Mult. to Alfa Laval

Snap-on Incorporated (21.9x, 17.7%)
Dover Corporation (24.6x, 16.8%)
Illinois Tool Works Inc. (27.7x, 22.5%)
IDEX Corporation (26.2x, 28.2%)
WABCO Holdings Inc. (26.1x, 14.3%)

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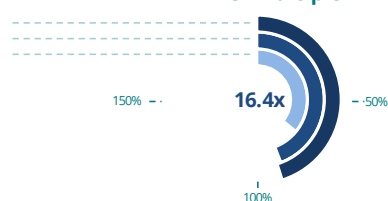
ValuFocus List: Core Franchise

Free Cash Return



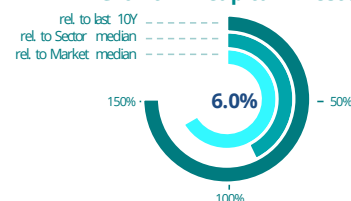
	Operating	Net
Last FY	14.9%	12.8%
Normalised	14.8%	12.8%
Mkt implied	8.9%	

FCF Multiple



	Operating	Net
Last FY	16.4x	20.8x
Normalised	18.2x	20.9x

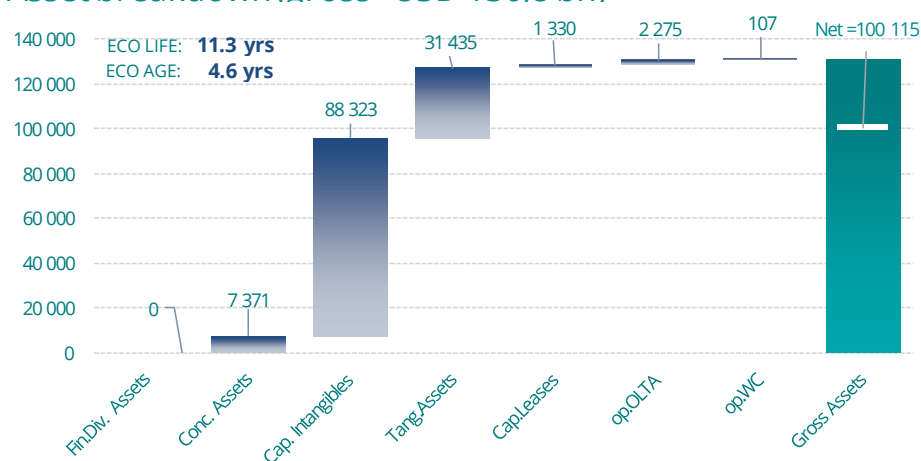
Growth in Capital Invested



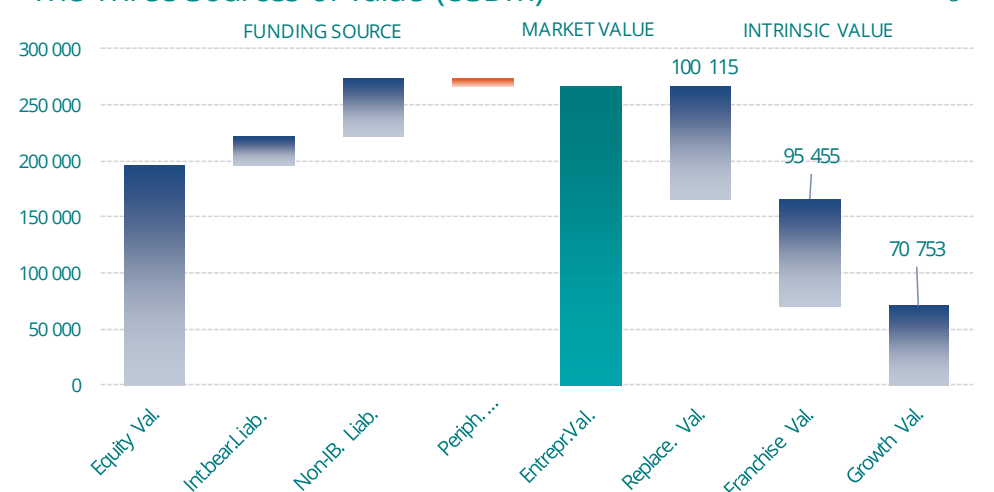
	Asset Growth
Est. Trend	6.0%
Last 10Y	1.5%
Implied over CAP	5.0%

Three pharmaceutical stocks make it into our core franchise list, and a few more in the contentious one. Price pressures are a well-documented phenomenon, as is the shortening of asset lives. Yet it remains that the stocks were expected to almost disappear from the planet a few years ago, and half a decade later, we find that 1- their ability to sustain and protect their franchise is not that damaged, 2- they have adapted to the new world (45% of Pfizer's revenues are in generic medicines today) and 3- their valuation is still attractive, especially in the context of expensive equity markets. Compare Johnson & Johnson to Pfizer: it has a similar rent (13,6% vs 12,8%) but trades on 5 points high multiple (26x vs 20,9x). Compare P&G to Pfizer: 9,6% rent on 29,5x...

Asset breakdown (gross - USD 130.8 bn)



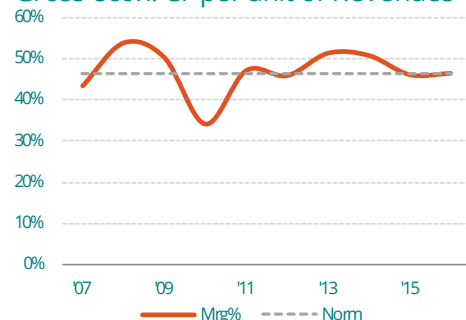
The Three Sources of Value (USDm)



Nothing out of the ordinary on the asset breakdown; we capitalise 20% of revenues expended for R&D to create a USD 88bn gross value. Note that if we capitalised, say, only 15% of revenues over just 8 years (perhaps with the argument that generics consume less capital), this would not materially change the rent or the FCF multiple. However, it would reduce the replacement value by about USD 27bn, and the implicit fade would need to change to compensate. The current figure of 8,4% would come down to 6,9%, and the average implied return would move up from 8,9% to 10,2%. These figures remain well within investable levels, in our view.

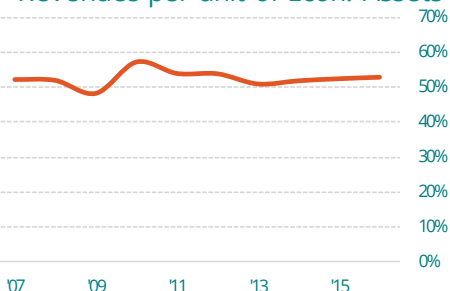
Economic Margin

Gross econ. CF per unit of Revenues



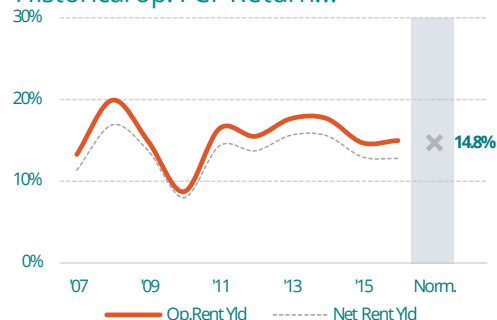
Asset Turn

Revenues per unit of Econ. Assets

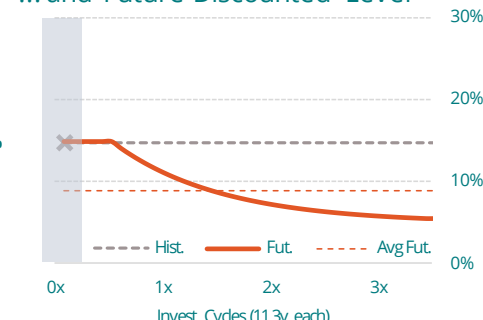


Op.FCF Return: Last 4Y: 14,8% | Next 4Y: 14,9% (Implied)

Historical op. FCF Return...



... and Future Discounted Level



The gross CF margin chart (first chart above) shows that, despite some volatility, nothing much has been altered in terms of margins. Our calculated normalised level of 46,3% looks very accurate and in no need of change. So much for the oft-mentioned upheaval of the industry. Capital intensity (second chart above) is high and unchanged, too, which results, expectedly, in a fairly constant operating rent. This makes the interpretation of the implicit future level (fourth chart above) fairly simple; investors in aggregate expect this state of affairs to carry on for a few more years, before returns start their journey downwards to the cost of capital. This is not an unreasonable view, but it is a cautious view. This company has experienced a sea change of its competitive landscape over the past decade, only to end up exactly where it started, in terms of margins, capital intensity and returns. We are all in favour of past experience not being a guide etc..., but this resilience is poorly priced by the market, which is not expecting to see another such decade going forward. In the context of high uncertainty on corporate profits, we would have expected proven resilience in a difficult environment to command a premium, not a discount.

Competitive Advantage

Fade Analysis

FADERATE:	8.4%
FRANCHISE VALUE WITH NO FADE:	166 629
IN % OF FADING FRANCHISE VALUE:	174.6%

Op. Economic Profits (USDm)

Actual & Discounted



Selected Alternative Investments Within Same Sector

Similar FCF Ret. to Pfizer Inc.:

Astellas Pharma, Inc. (12,3x, 11,7%)
Teva Pharmaceutical Indust (17,7x, 13,6%)
Valeant Pharmaceuticals In (18,3x, 16,1%)
Mylan N.V. (19,5x, 14,3%)
Roche Holding AG (21,6x, 11,8%)

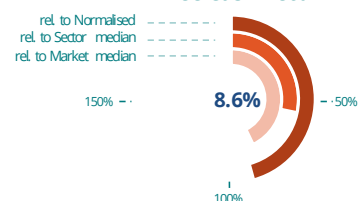
Similar FCF Mult. to Pfizer Inc.:

Novo Nordisk A/S (18,7x, 22%)
Valeant Pharmaceuticals I (18,3x, 16,1%)
Mylan N.V. (19,5x, 14,3%)
Hikma Pharmaceuticals PLC (19,3x, 13,8%)
Teva Pharmaceutical Indus (17,7x, 13,6%)

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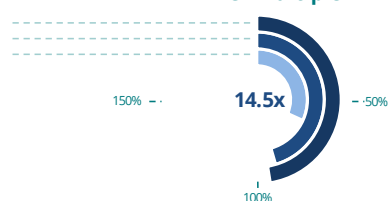
ValuFocus List: Core Franchise

Free Cash Return



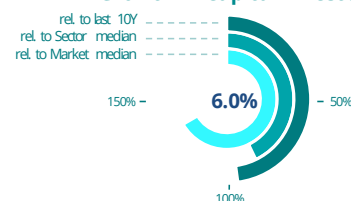
	Operating	Net
Last FY	8.6%	7.0%
Normalised	9.4%	7.0%
Mkt implied	6.3%	

FCF Multiple



	Operating	Net
Last FY	14.5x	20.3x
Normalised	15.3x	20.6x

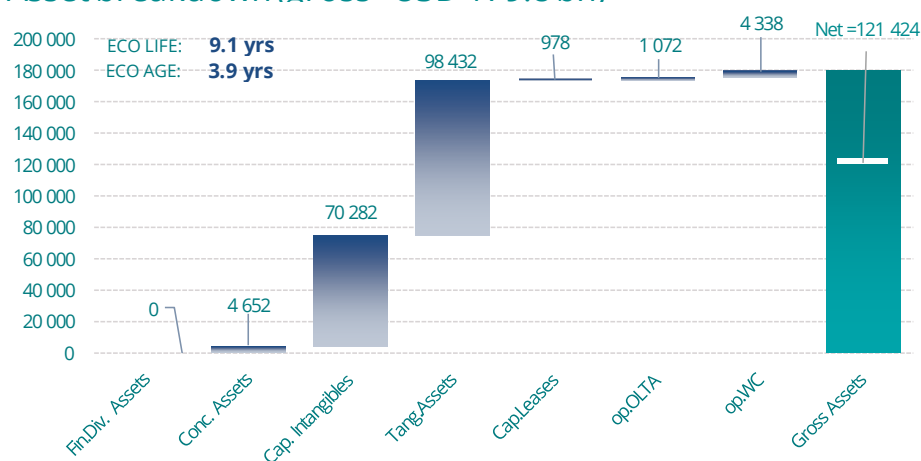
Growth in Capital Invested



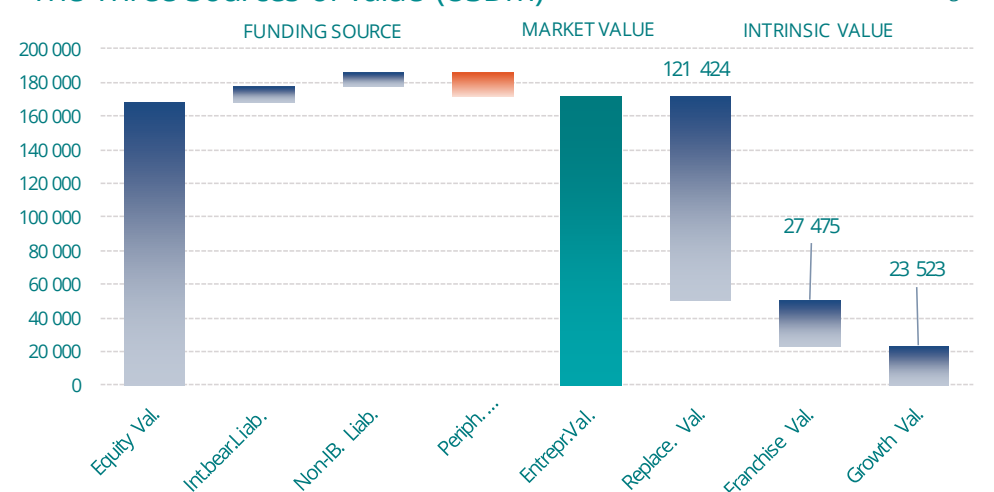
	Asset Growth
Est. Trend	6.0%
Last 10Y	6.3%
Implied over CAP	5.0%

The main reason *not* to buy Intel's shares is that cyclical companies are preferably bought at the trough, and the last trough was in 2009... Despite this unhelpful timing, investors who can ride the cycle should be interested. We deal with Intel's cyclical by normalising its CF margin and therefore cash return. Taking a simple average of peak (ca 15%) and trough (ca 7%) operating cash return would suggest a normalised level around 11%. We are using 9.4%, which yields a normalised op.FCF multiple of 15.6x only, inexpensive in the context of the current equity markets. In figures, this is equivalent to about USD 11.3bn of op.FCF, in line with reported numbers. The net FCF multiple, which we prefer, is 20.8x, again at a noticeable discount to the (expensive?) market.

Asset breakdown (gross - USD 179.8 bn)

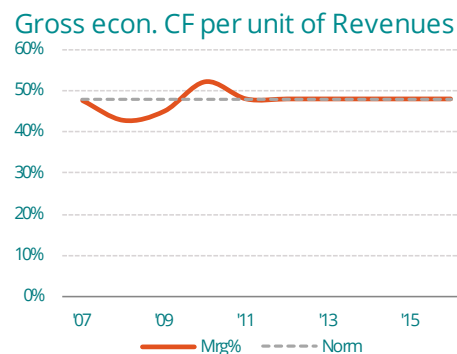


The Three Sources of Value (USDm)

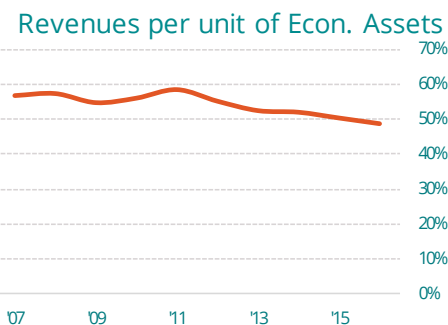


The gross asset breakdown shows Intel as the behemoth that it is: almost USD 100bn of capital tied in tangible fixed assets. We estimate that Intel also uses slightly more than USD 70bn of intangible capital. The company reports that 20% of revenues are ploughed into R&D each year, which need to be capitalised. The Three Sources of value chart suggests that perhaps we should not include Intel in our Core list: it hardly has any franchise... But the reason is, partly, that we calculate a *market-implied* franchise, and Intel is at the cheap end of the current market spectrum. With a fade rate more in line with Intel's status and market position (we suggest 6%), the Franchise Value would be worth twice as much.

Economic Margin

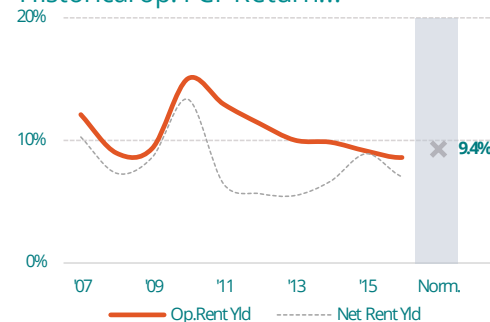


Asset Turn

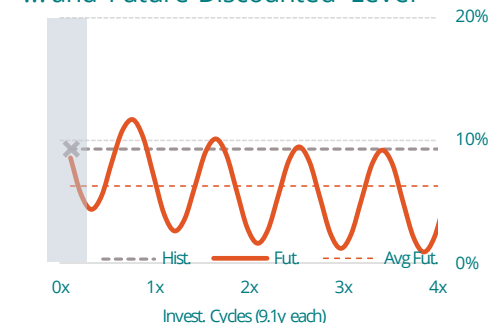


Op.FCF Return: Last 4Y: 9.4% | Next 4Y: 6% (Implied)

Historical op. FCF Return...



... and Future Discounted Level



The latter half (from 2011 onwards) of the first chart, above, is not Intel's real gross CF margin, but our estimate of its normalised, or mid-cycle, level: 48%. For comparisons, the corresponding real margin is 51.2% as of last reported. Similarly, the operating FCF return (third chart above) is based on the same normalised margin from 2011 onwards, which means that the return simply follows Intel's capital intensity. On this subject, we note that Intel is not managing to hold on to its historical turn of ca 55% (second chart above) and is now turning over 47% of its net assets, which is a low number, showing the substantial capital intensity of the semiconductor sector. These adjustments notwithstanding, it is not too much of a stretch to assume that 9.4% is representative of Intel's normalised operating FCF asset yield (remember that a simple arithmetic peak to trough average suggests 11%). In this case, the implicit fade profile (fourth chart above) is undemanding, to say the least. The fade is a steep 10.5%, past the 10% "terminal decline" mark. In less technical terms, the average operating cash return over this fade period is 6.3%. Furthermore, note that it is possible, within the constraints of the current valuation, to fit an immediate new trough (to 4.2%) one year out. We have to conclude that the new cycle is already priced in. What we can't say is if bad momentum, when it comes, can crush this value.

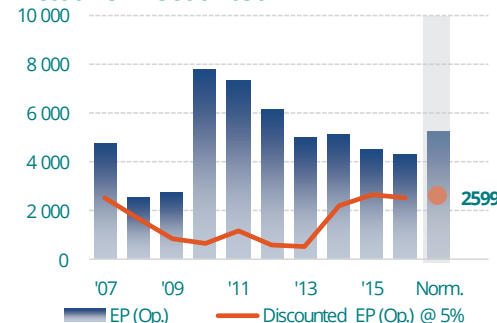
Competitive Advantage

Fade Analysis

FADE RATE:	10.5%
FRANCHISE VALUE WITH NO FADE:	82 583
IN % OF FADING FRANCHISE VALUE:	300.6%

Op. Economic Profits (USDm)

Actual & Discounted



Selected Alternative Investments Within Same Sector

Similar FCF Ret. to Intel Corp.:

Tokyo Electron Limited (48x, 9.8%)
Marvell Technology Group L (60.7x, 3.7%)
Infineon Technologies AG (70.1x, 2.8%)
NVIDIA Corporation (70.7x, 12.5%)
Microchip Technology Inc. (32.5x, 14%)

Similar FCF Mult. to Intel Corp.:

KLA-Tencor Corporation (21.9x, 18.2%)
Xilinx Inc. (25.6x, 19.4%)
Texas Instruments Inc. (23.5x, 22.8%)
Analog Devices, Inc. (26.9x, 17%)
Applied Materials, Inc. (27.2x, 14.2%)

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GLOSSARY

Competitive Advantage Period (CAP)	The period during which a firm can generate a return (see Rent) above the cost of capital.
Economic Profits	Cash profits or Free Cash Flow minus the notional cost of capital.
Excess Return	The level of return above the cost of capital.
Fade	The rate of normalisation of the competitive position of the firm, defined as its level of Rent and growth rate. By construction, an excess return cannot be assumed to be perpetual, and the market always assumes an eventual normalisation towards the cost of capital.
Franchise Value	One of the three sources of value, defined as the net present value of a firm's sustainable level of Economic Profits over its Competitive Advantage Period.
Gross economic Capital (GeC)	The sum of all operating capital used by the firm pre-depreciation, including all tangible assets, capitalised intangible assets and operating leases, Other Long Term Assets (OLTA) and concession assets.
Growth Value	One of the three sources of value, defined as the residual of: Market Value minus Replacement Value and Franchise Value.
Intrinsic Value	The sustainable value of a firm, defined as Replacement Value plus Franchise Value.
Net economic Capital (NeC)	The depreciated value of GeC, according to the principles of economic depreciation.
Net Free Cash Flow	Gross cash flow minus all capital spending.
Operating Free Cash Flow	Gross cash flow minus maintenance capital spending.
Rent or Rent Yield	The ratio of FCF over Net economic Capital. We refer to it as "asset yield" or "cash return" as well.
Replacement Value	One of the three sources of value, equal to Net economic Capital.
Residual Income Model	A valuation framework defining the price of an asset as the net (depreciated) value of this asset plus the net present value of its sustainable level of economic profits.

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	"Buy", "Hold" and "Sell" recommendations		Investment services provided to these issuers in previous 12 months	
Recommendation	Number	% of total	Number	% of total
Buy	40	100	0	0
Hold	0	0	0	0
Sell	1	0	0	0

The above table covers the period *1st September 2016* to *12th June 2017*. This disclosure is reviewed and updated on a quarterly basis. Last updated *12th June 2017*.



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