

Financial Reporting and Analysis of:

**Intel Corporation**

Stock symbol: INTC

Listed on the:

National Association of Securities Dealers Automated Quotation (NASDAQ)

Prepared for:

Dr. Clark Wheatley

Florida International University

In partial fulfillment of the requirements of the course:

**ACG6175**

## **Table of Contents**

## **Page**

Executive Summary .....	3
Strategic Analysis .....	4
Company Overview .....	4
Industry Analysis .....	5
Competitive Environment .....	7
Competitive Advantage .....	10
SWOT Analysis .....	11
Values of Key Personnel .....	14
Societal Expectation .....	15
Accounting Analysis .....	16
Policies .....	16
Flexibility .....	19
Strategy .....	22
Disclosure Quality .....	24
Red Flags .....	25
Distortions .....	26
Financial Analysis .....	27
Return on Equity Decomposition .....	27
Profitability .....	31
Asset Management .....	34
Liquidity .....	36
Debt & Coverage .....	39
Sustainable Growth .....	42
Forecasting .....	43
Sales .....	44
Income .....	45
Balance Sheet .....	48
Valuation .....	49
Price Multiples .....	50
Discounted Free Cash Flow .....	51
Discounted Abnormal Earnings .....	53
Discounted Abnormal Return on Equity .....	54
Earnings Growth (Buffet's Model) .....	54
Assessment Of Solvency .....	56
Calculation of Altman Z-Score Model .....	57
Estimate of Debt Rating .....	58
Actual Bond Rating .....	59
Conclusion .....	60

## Executive Summary

Based on Strategy, Accounting, Financial, Credit and Prospective analysis of Intel Corporation, it is undervalued at current price levels and is a **BUY**. The analysis suggests Intel's sustainable growth rate is 12%, with an expected earnings per share growth of 35% over the next 10 years and year-over-year value creation of 6.5% to 14.7%. Finally, with 85%+ of the microprocessor market, Intel is consumer monopoly allowing it to command a premium for its products resulting in profit margins well above industry norms.

## **Strategic Analysis**

### ***Company Overview***

Intel Corporation (Intel) is a multinational semiconductor chip maker headquartered in Santa Clara, California. Founded by semiconductor pioneers Robert Noyce and Gordon Moore and associated with visionary Andrew Grove, Intel combines advanced chip design capability with state-of-the-art manufacturing capability<sup>1</sup>. Incorporated in 1968, Intel's core business is designing and manufacturing integrated digital technology platforms consisting of microprocessors and chipsets<sup>2</sup>. These platforms are used in various computing applications including tablets, smartphones, laptops, desktops, servers, automobile systems, medical devices and factory machines. The company also provides mobile components such as WiFi products, radio frequency transceivers, Bluetooth products, power management chips and global navigation satellite system components. In addition, through various company acquisitions, Intel offers network and content security as well as security software products for consumer, mobile, and corporate environments. Intel sells its products primarily to manufacturers in the computing and communications industries. Intel has over 107,000 employees and is the largest publicly traded semiconductor manufacturer by revenues with sales of over \$52 billion last year<sup>3</sup>. The following sections analyze the elements of Intel's success.

---

<sup>1</sup> [en.wikipedia.org/wiki/Intel](http://en.wikipedia.org/wiki/Intel)

<sup>2</sup> [www.reuters.com/finance/stocks/companyProfile?symbol=INTC.O](http://www.reuters.com/finance/stocks/companyProfile?symbol=INTC.O)

<sup>3</sup> [finance.yahoo.com/q?s=intc](http://finance.yahoo.com/q?s=intc)

## Industry Analysis

In order to understand the strategic avenues Intel may pursue, one must understand the context of the semiconductor industry. The number of semiconductor components used in our daily lives is constantly expanding. Chips form the core of the newest technological devices such as smartphones and tablets. Semiconductors are also becoming more common in automotive and industrial markets as well as consumer goods such as televisions and appliances. As a consequence, the semiconductor industry has been growing for over 40 years, in spite of economic downturns, the bursting of the internet bubble and the 2008–2009 financial crisis, with industry annual revenues of over \$200 billion<sup>4</sup>. As shown below, two companies dominate the semiconductor industry<sup>5</sup>.

Semiconductor Manufacturer	Revenue (million \$USD)	Market share
Intel Corporation	46 960	0.148
Samsung Electronics	33 456	0.105
Qualcomm	17 341	0.055
Micron Technology	14 168	0.045
SK Hynix	13 335	0.042
Toshiba Semiconductor	12 459	0.039
Texas Instruments	11 379	0.036
Broadcom	8 121	0.026
STMicroelectronics	8 076	0.025
Renesas Electronics	7 822	0.025
Infineon Technologies	5 096	0.016
AMD	5 076	0.016
NXP	4 658	0.015
MediaTek	4 434	0.014
Sony	4 394	0.014
Freescale Semiconductor	3 958	0.012
NVIDIA	3 612	0.011
Marvell Technology Group	3 281	0.01
ON Semiconductor	2 740	0.009
Analog Devices	2 677	0.008

<sup>4</sup> [www.pwc.com/gx/en/technology/publications/semiconductor-industry-analysis-and-projections.jhtml](http://www.pwc.com/gx/en/technology/publications/semiconductor-industry-analysis-and-projections.jhtml)

<sup>5</sup> [www.isuppli.com/Semiconductor-Value-Chain/News/Pages/Semiconductor-Sales-Recover-in-2013-;-Micron-Surges-to-Fourth-Place-in-Global-Chip-Market.aspx](http://www.isuppli.com/Semiconductor-Value-Chain/News/Pages/Semiconductor-Sales-Recover-in-2013-;-Micron-Surges-to-Fourth-Place-in-Global-Chip-Market.aspx)

It should be noted, however, that the semiconductor space is very complex. The semiconductor industry is made up of four main product categories: memory, microprocessors, integrated circuits and complex "Systems on a Chip", where a single integrated circuit chip has an entire system's capability on it. Not all manufacturers participate in all categories. For example, with the exception of Advanced Micro Devices (AMD), Intel dominates the microprocessor segment with over 85% of the market share<sup>6</sup>.

Due to fierce competition and new technologies that lower the cost of producing semiconductors, there is a constant need for semiconductor manufacturers to come up with new and cheaper products. Thus, the semiconductor industry is characterized by rapid technological innovation. Another characteristic of the semiconductor industry is the high capital expenditures needed to support both growth and technological progress. Specifically, the fixed costs and minimum scale associated with building a new chip fabrication facility is in the billions<sup>7</sup>. Finally, the semiconductor industry has been characterized as being cyclical. This occurs because semiconductor manufacturers face booms and busts in semiconductor demand. This cycle coincides with demand for various electronic devices such as personal computers and smartphones, which is in synch with consumer spending patterns. In other words, when the economy is good, semiconductor manufacturers generally produce at capacity. However, when the economy is struggling and computer sales are slow, the semiconductor manufacturers struggle too<sup>8</sup>.

---

<sup>6</sup> McGrath, D. (2011-08-02). IDC cuts PC microprocessor forecast, EE Times, retrieved from [www.eetimes.com](http://www.eetimes.com)

<sup>7</sup> [www.valueline.com/Stocks/Industries/Industry\\_Analysis\\_\\_Semiconductor.aspx](http://www.valueline.com/Stocks/Industries/Industry_Analysis__Semiconductor.aspx)

<sup>8</sup> [www.investopedia.com/features/industryhandbook/semiconductor.asp](http://www.investopedia.com/features/industryhandbook/semiconductor.asp)

## ***Competitive Environment***

In this section, Porter's Model<sup>9</sup> is used to analyze the semiconductor industry. The model is based on five forces including Rivalry Among Competition, Threat Of Substitution, Threat Of New Entrants, Bargaining Power Of Buyers and Bargaining Power Of Suppliers, each of which is addressed in the following paragraphs.

*RIVALRY AMONG COMPETITION*--The semiconductor industry is characterized by intense rivalry between a few companies. Firms in the semiconductor industry compete to manufacture products that are smaller, faster and cheaper<sup>10</sup>. This is the result of a short product cycle that is associated with PC components such as microprocessors and memory that are near obsolescence shortly after being released. The semiconductor industry changes rapidly as technology demands change. This change keeps the industry competitive as each company tries to get to market first with differentiated products. The result is an industry that is always on the cutting-edge. The technology is constantly changing into something better so it is hard for one company to remain on top. What tends to happen with this type of rivalry is that there are several industry players with similar size that rise as the larger players. This happens because no one firm can always be the one with the newest, fastest and cheapest product available<sup>11</sup>.

---

<sup>9</sup> Porter, M. (1996). "What is strategy?" Harvard Business Review 74: 61-78.

<sup>10</sup> [www.investopedia.com/features/industryhandbook/semiconductor.asp](http://www.investopedia.com/features/industryhandbook/semiconductor.asp)

<sup>11</sup> Banks, W., (2011). Semiconductor Industry Analysis & Competitive Analysis. Goizueta Business School, Emory University.

*THREAT OF SUBSTITUTION*--The threat of substitutes in the semiconductor industry depends on the segment<sup>12</sup>. In general, there is no substitute for semiconductors for use in electronic products needing microprocessors or memory. That being said, new techniques to produce semiconductor products are possible. However, the rivalry in the semiconductor industry has enabled the industry to change manufacturing lines in a very short time. This ability takes away opportunities for others to compete in the market. The semiconductor industry would respond quickly to any successful substitute process, limiting the advantage that particular substitute approach may have had. Additionally, given the research and development costs, as well as manufacturing plant cost constraints, semiconductor firms can find themselves spending significant amounts of money to research and develop new products just to find that their competition has already beat them to it. This industry tension, keeps the semiconductor business environment volatile and difficult for any substitutes to remain competitive<sup>13</sup>.

*THREAT OF NEW ENTRANTS*--Setting up a chip fabrication facility requires billions of dollars. This high cost makes entry near impossible except for the largest firms. Thus, the established semiconductor firms have an enormous advantage over any new entrants. Another related barrier is the short product cycle of semiconductors. It would require a new entrant to the semiconductor industry several products, just to recoup the cost of the manufacturing plant. "Fabless" chip companies that outsource manufacturing have started to be contenders in niche areas. However, the speed at which the semiconductor industry can adapt has limited

---

<sup>12</sup> [www.investopedia.com/features/industryhandbook/semiconductor.asp](http://www.investopedia.com/features/industryhandbook/semiconductor.asp)

<sup>13</sup> Banks, W., (2011). Semiconductor Industry Analysis & Competitive Analysis. Goizueta Business School, Emory University



the success of these "Fabless" firms. Another potential threat is if a business that uses semiconductors in their products decides to backward integrate (e.g., Apple). Another potential threat is indirect competition from governments that subsidize firms in their country, giving them an unfair advantage in the market place. Finally, counterfeit semiconductors can also create unfair competitive forces<sup>14</sup>.

*BARGAINING POWER OF BUYERS*--The semiconductor industry is dominated by a small number of large firms. On the other hand, there are numerous buyers ranging from PC makers to electronic do-it-yourselfers. In general, this means buyers have little bargaining power. However, there are some exceptions. Large PC and electronic device makers do have some influence due to the sheer volume of products they sell. Their consistent large purchase volumes give some computer and device manufacturers (e.g., Dell and Hewlett-Packard) considerable leverage. Additionally, these high volumes help semiconductor manufactures lower their per unit fixed costs. Thus, there is a symbiotic relationship between the semiconductors manufactures and the major computer and device manufacturers<sup>14</sup>.

*BARGAINING POWER OF SUPPLIERS*--There are a small number of semiconductor manufacturers but a large number of suppliers. This allows the semiconductor firms to assert influence and reduce the bargaining power of each individual supplier to a minimum<sup>15</sup>. However, for some niche services such as fabrication plant operation or foundries, "Fabless" firms, who only design chips and have others firms manufacturer them, are becoming

---

<sup>14</sup> Banks, W., (2011). Semiconductor Industry Analysis & Competitive Analysis. Goizueta Business School, Emory University

<sup>15</sup> [www.investopedia.com/features/industryhandbook/semiconductor.asp](http://www.investopedia.com/features/industryhandbook/semiconductor.asp)

increasingly dependent on a handful of large foundries. As the suppliers of cutting-edge equipment and production skills, these foundries are gaining considerable bargaining influence.

### ***Competitive Advantage***

Most types of semiconductors are fungible, forcing semiconductor manufactures to pursue a competitive strategy based on differentiation. For differentiation to be successful, a firm must achieve three things: 1) identify attributes of a product that customers value, 2) position to meet the customer need in a unique manner, and 3) achieve differentiation at a cost lower than the price the customer is willing to pay<sup>16</sup>.

Intel is the world's fifth most valuable brand worth \$35 billion and its microprocessors drive almost 90% of the world's personal computers. Intel is able to achieve this success by dominating the above three elements of a differentiation strategy. First, Intel employs anthropologists who study how people use technology in their lives. Intel also uses focus groups to find out what customers think of future scenarios that Intel anticipates such as lifestyle developments. This information helps Intel's designers and engineers understand what customer want. Second, Intel doesn't just sell its semiconductors. Intel's approach is to create many types of chips and software, and then combine them into platforms, where a platform is an integrated set of proven technologies designed from the start to work together. These platforms enhance performance bringing added value for consumers. Finally, Intel is a 'manufacturing monster' having invested billions of dollars in manufacturing plants that can produce more processors in a day than some of Intel rivals can produce in a year. Intel can

---

<sup>16</sup> Palepu, K &, Healy, P (2007). Title Business Analysis and Valuation: Using Financial Statements. Edition 4. Publisher Cengage Learning.

develop and bring a product to market faster than anyone else. By leveraging this manufacturing capability, Intel can increase production to bring a product to market in large volumes. This agility allows Intel to deliver a product that consumers want at price customers value<sup>17</sup>.

### ***SWOT Analysis***

A SWOT analysis is a structured planning framework to evaluate the strengths, weaknesses, opportunities, and threats for a firm. Specifically, strengths address business characteristics that give the firm an advantage over others; weaknesses identify company characteristics that place the firm at a disadvantage relative to others; opportunities are circumstances the firm could exploit to its advantage; and finally, threats are conditions that could cause trouble for the firm. The following paragraphs apply the SWOT framework to Intel.

*STRENGTHS*--Intel is an industry leader. Intel controls over 85% of the microprocessor market and over 50% of the graphics chip market. Intel is also a big player in the memory and motherboard market. This leadership position gives Intel more latitude to invest in research and development, which translates into increased efficiency of design and manufacturing. Intel also has a strong company network. Intel controls the entire production process for most of its products. This network of manufacturing facilities and assembly/test facilities gives Intel a powerful competitive advantage. It allows Intel to have more direct control over processes, quality control, product cost, volume, and timing of production. Further, Intel has strong brand recognition. Intel is the world's fifth most valuable brand worth over \$35 billion. This strong brand recognition coupled with strong market position enhances Intel's investor confidence.

---

<sup>17</sup> [businesscasestudies.co.uk/intel/](http://businesscasestudies.co.uk/intel/)

Additionally, Intel has strategic partnerships with prominent technology players such as IBM, Microsoft, LG, AT&T and Nokia. This allows Intel to launch new services, reach more customers, and improve their expertise in niche areas. These strategic collaborations enable Intel to expand its customer base and product portfolio, enhancing their competitive advantage. Another strength is that Intel's research and development capabilities are second to none. The company consistently spends over \$5 billion a year on research and development. The result is a consistent line of innovative products and advanced technologies. Finally, Intel offers a broad portfolio of microprocessors. They have microprocessors and chipsets for notebooks, netbooks and desktops. Intel also supplies products for data center and cloud computing environments. Additionally, Intel provides chips at variety of price and performance points<sup>18</sup> to meet various customer needs.

*WEAKNESSES*--Given the fungible nature of semiconductors, Intel faces a never-ending battle with competitors trying to take its leadership spot. In some niche areas, competitors, such as AMD with its 64-bit processor, are catching up to Intel. In other areas, such as flash memory, companies like Samsung have overtaken Intel. These challenges will likely continue. Another issue is the volatility of the semiconductor industry. Overall, the industry is very cyclical with the general health of the economy dictating demand for semiconductor components. Unexpected changes in the global economy can have an extremely negative effect on Intel and the semiconductor industry. Additionally, in Intel's ongoing pursuit to expand its customer base, it often ventures into products like wireless chipsets and communications. While these offering expand Intel's portfolio, most of Intel's revenue still

---

<sup>18</sup> [www.datamonitor.com](http://www.datamonitor.com)

comes from microprocessor and motherboard products. Thus, expanding into these non-core areas, requires capital with a disproportionate return. Finally, Intel is dependent on a few customers for a significant proportion of its revenues. Intel's largest two customers, Hewlett-Packard and Dell, account for over a third of its revenues. This high dependence on a few customers could reduce Intel's bargaining power and increases its business risk<sup>19</sup>.

*OPPORTUNITIES*--Intel has acquired various companies to expand beyond its traditional PC and server markets. For example, McAfee, now a wholly-owned subsidiary of Intel, has a suite of software-related security solutions and services that help in protecting internet-connected devices and networks from malicious content and unsecured communications. Another expansion example is Intel's purchase Infineon's Wireless Solutions business. This acquisition further strengthened Intel's internet connectivity strategy enabling it to offer a portfolio of products that spans across a range of wireless options from Wi-Fi and 3G, to WiMAX and LTE. Another potential area for growth is telehealth and home health monitoring. Telehealth is a \$10 billion market and growing. Intel already offers technology-enabled products that are designed to reduce healthcare costs and connect people and information to improve patient care and safety. To get in on this growing market, Intel has aligned with GE to market and develop various home based health technologies. Finally, there is increasing demand for cloud computing infrastructure. Intel is well positioned to benefit from this growing market. Specifically, Intel offers products that are incorporated into servers, storage, workstations, and other products that make up the infrastructure for data center and cloud

---

<sup>19</sup> [www.datamonitor.com](http://www.datamonitor.com)

computing environments. Intel has also invested heavily in various cloud computing companies<sup>20</sup>.

*THREATS*--Due to its domination in the microprocessor market, Intel faces various issues including antitrust and unfair business practice inquiries with regulatory commissions in Europe, Asia and the U.S. Further, staying one step ahead of the competition is what gives Intel its edge. Because of this, Intel is subject to various security related issues, including theft and misuse of its intellectual property. If successful, these attempts could harm Intel's leadership position and reputation<sup>20</sup>.

### ***Values of Key Personnel***

Intel values themselves as a global technology and business leader. To this end, they are committed to doing the right things, the right way. Intel sees corporate responsibility as good business. In their annual report, Intel outlines their strategic priorities and performance on a range of environmental, social and governance factors, including workplace practices, community engagement, and supply chain responsibility<sup>21</sup>. Innovation is an integral part of Intel's culture. At the heart of this innovation and Intel's business success are its people. One of the six Intel Values is "Great Place to Work," which reinforces Intel's strategic importance on investing in their people. Intel supports this ethos by ensuring a safe, respectful and ethical work environment that enables employees to thrive on the job and in their communities<sup>22</sup>. Intel also believes that technology plays a fundamental role in finding solutions to the world's

---

<sup>20</sup> [www.datamonitor.com](http://www.datamonitor.com)

<sup>21</sup> [www.intel.com/go/responsibility](http://www.intel.com/go/responsibility)

<sup>22</sup> [www.intel.com/jobs](http://www.intel.com/jobs)

environmental challenges. Intel is a recognized leader in sustainability for the ways they work to minimize the environmental impacts of their operations. Additionally, Intel designs products that are increasingly energy efficient. In 2012, for the fifth year in a row, Intel was the largest voluntary purchaser of green power according to the U.S. Environmental Protection Agency. To underscore the importance of sustainability to their business, Intel includes an environmental component in the formula used to determine the payout for employee and executive variable compensation. Intel has also continued to collaborate with others to drive global standards for products and manufacturing that ensure energy-efficient performance<sup>23</sup>. Finally, Intel believes education is the foundation of innovation, and as a technology company, Intel believes their success rests on the availability of skilled workers, a healthy technology ecosystem, and knowledgeable customers. Intel believes this requires access to technology and quality education. Intel strives to transform education through their Intel Foundation to collaborate with governments and educators and invests approximately \$100 million annually in education programs around the world<sup>24</sup>.

### ***Societal Expectation***

Intel is a business leader controlling over 85 percent of the microprocessor market and has the world's fifth most valuable brand. As a business leader, Intel is committed to the highest standards of business ethics and corporate governance. Intel captures these values in their Code of Conduct<sup>25</sup> which serves as a compass guiding the actions of Intel employees,

---

<sup>23</sup> [www.intel.com/go/environment](http://www.intel.com/go/environment)

<sup>24</sup> [www.intel.com/educate](http://www.intel.com/educate)

<sup>25</sup> [www.intel.com/content/www/us/en/policy/policy-code-conduct-corporate-information.html](http://www.intel.com/content/www/us/en/policy/policy-code-conduct-corporate-information.html)

directors, and business partners, ensuring consistent and uncompromising integrity. Further, Intel is dedicated to caring for people and natural resources by designing safe, energy-efficient products that minimize impact to the environment. To this end, Intel has documented policies on Environmental, Health, and Safety; Climate Change; and Water use. Finally, Intel is committed to ethical and legal business, environmental, human rights, and labor practices on a worldwide basis with annual report statements related to support for Human Rights, their stance against Human Trafficking & Slavery and policy on Conflict Minerals<sup>26</sup>. While most company annual reports contain this type of altruistic language, a review of Intel news releases for the last year suggests Intel's actions are consistent with their commitments.

### **Accounting Analysis**

The purpose of this section is to evaluate the degree to which Intel's accounting captures its true business practices. Specifically, this section will examine places where Intel has accounting flexibility. Additionally, this section will evaluate the appropriateness of Intel's accounting policies and estimating techniques. Together, these provide an indication of the credibility behind Intel's numbers.

### ***Policies***

Intel's annual report outlines all of its accounting policies<sup>27</sup> which include specific policies on Use of Estimates, Fair Value, Fair Value Hierarchy, Cash Equivalents, Trading Assets, Available-for-Sale Investments, Non-Marketable and Other Equity Investments, Other-Than-Temporary Impairment, Derivative Financial Instruments, Measurement of Effectiveness,

---

<sup>26</sup> [www.intel.com/go/governance](http://www.intel.com/go/governance)

<sup>27</sup> [www.intc.com/intel-annual-report/2013/10K/57-accounting-policies.html](http://www.intc.com/intel-annual-report/2013/10K/57-accounting-policies.html)



Securities Lending, Loans Receivable, Inventories, Property, Plant and Equipment, Goodwill, Identified Intangible Assets, Product Warranty, Revenue Recognition, Advertising, Employee Equity Incentive Plans, and Income Taxes. Most of these contain 'boilerplate' language that is similar to the policies stated in Texas Instruments (TXN) and Advanced Micro Devices (AMD) annual reports. The following paragraphs highlight some of the most notable policies as they relate to the credibility of Intel financial statements.

**Use of Estimates** - Intel makes extensive use of estimates throughout its financial statements. These include subjective judgments on the valuation of non-marketable equity investments, assessments on the recoverability of long-lived assets, recognition and measurement of current and deferred income taxes, valuation of inventory, and recognition & measurement of loss contingencies. While TXN and AMD make similar statements, these areas where estimates are used warrant further investigation when examining the statements.

**Fair Value** - Fair value is the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date<sup>28</sup>. When determining fair value, Intel considers the principal or most advantageous market in which they would transact. The TXN and AMD reports contain nebulous statements about fair value. Intel, at least states they use an optimistic, but perhaps not realistic, estimation methodology.

**Inventories** - Intel computes inventory cost on a first-in, first-out basis, which is consistent with TXN and AMD. This industry first-in, first-out inventory policy makes sense given the short life of semiconductor products. However, this first-in, first-out process suggests

---

<sup>28</sup> [www.intc.com/intel-annual-report/2013/10K/57-accounting-policies.html](http://www.intc.com/intel-annual-report/2013/10K/57-accounting-policies.html)

eventually one of these firms winds up having some obsolete inventory that will have to be written off.

**Goodwill** - Goodwill represents the excess of the purchase price over the fair value of net tangible and identifiable intangible assets acquired. Neither Intel, TXN nor AMD amortize goodwill, but test periodically for impairment. They all evaluate whether goodwill has been impaired by determining if the estimated fair value of the acquisition is less than the carrying value. The implied fair value is determined through the use of industry valuation models. Any differences are expensed. This topic will be discussed further under Long-Lived Assets.

**Revenue Recognition** - Intel's revenue recognition is quite complex due to its different business segments and its variety of end-users. For example, Intel recognizes revenue from products sold directly to end-consumers when delivery has occurred. For sales made to distributors, Intel defers product revenue and related costs of sales until the distributors sell the merchandise. This is done primarily to give the distributor price protection because of frequent sales price reductions and rapid technology obsolescence in the industry. Intel also receives revenue from license agreements primarily with the McAfee segment. Revenue from these agreements is deferred and recognized over the performance of the agreement period. Similarly, revenue Intel derives from online subscription products is deferred and recognized over the subscription periods. For Intel professional services, revenue is recognized as services are performed. To make revenue recognition even more complicated, Intel has numerous relationships where all of these elements are being provided to a single customer. In these cases, revenue is allocated across the separately identified deliverables and may be recognized or deferred. Costs associated with all of these revenue generating activities are deferred and

amortized over the same period that the related revenue is recognized<sup>29</sup>. While revenue recognition is not directly comparable for TXN and AMD, for basic components they use similar revenue recognition policies. Revenue Recognition is an area of accounting flexibility that will be discussed further in the paragraphs below.

### ***Flexibility***

In the Management's Discussion & Analysis section of the annual report, Intel is very forthcoming about the extensive use of subjective estimates in their financial reporting<sup>30</sup>. The key areas include the valuation of non-marketable equity investments, assessment on recoverability of long-lived assets, recognition and measurement of current and deferred income taxes, the valuation of inventory and recognition and measurement of loss contingencies. The gist of these estimates are to identify the fair value of an asset. The estimate methodologies provide ample accounting flexibility for Intel and are covered in more detail in the following paragraphs.

Non-Marketable Equity Investments - Intel invests in non-marketable equity instruments of private companies ranging from start-ups to mature companies with established revenue streams and business models. At the end of December 2013, the value of these types of investments was valued at \$2.3 billion. Since these equity stakes are non-marketable, Intel has to estimate their value. Intel uses two estimating approaches. The first is based on using financial metrics, such as projected revenue, projected earnings, and financial ratios of comparable public companies. The selection of companies for comparison is an art since the

---

<sup>29</sup> [www.intc.com/intel-annual-report/2013/10K/57-accounting-policies.html](http://www.intc.com/intel-annual-report/2013/10K/57-accounting-policies.html)

<sup>30</sup> [www.intc.com/intel-annual-report/2013/10K/28-critical-accounting-estimates.html](http://www.intc.com/intel-annual-report/2013/10K/28-critical-accounting-estimates.html)

start-up often has a unique product and service. Generally, however, it is based on factors including company size, growth rate, industry, and development stage. For more mature companies, Intel uses a discounted cash flow model, which requires significant estimates regarding the company's revenue, costs, and discount rates based on the risk profile of comparable companies. Estimates of revenue and costs are developed using available market, historical, and forecasted data. If Intel determines the fair value of an investment is below the carrying value, Intel writes down the investment to its fair value. It is interesting to note that these impairments of non-marketable equity investments were \$112 million in 2013, \$104 million in 2012 and \$63 million in 2011. Assuming the estimates are correct, Intel's losses on these types of investments has doubled over the 2 year period, although the \$112 million only represents about 5% of the entire \$2.3 billion portfolio.

Long-Lived Assets - Property, Plant, Equipment, Goodwill and other Identified Intangibles all follow an estimating approach similar to Non-Marketable Equity Investments. Specifically, Intel tries to find comparables based on groupings of like assets. If the assets are directly producing a revenue stream, then a cash flow model is used. However, even when a cash flow model is used, considerable subjective judgments regarding the remaining useful lives of assets have to be made. In general, the assumptions and estimates used to determine future values and remaining useful lives of Intel's long-lived assets are complex, subjective and influenced by numerous external factors such as industry and economic trends. Overall, these impairments are small relative to the size of Intel. In 2013, impairment charges were \$17

million (\$21 million in 2012 and \$10 million in 2011). It should be noted, however, these values are small only if you assume the estimates are correct<sup>31</sup>.

**Income Taxes** - Intel makes various estimates and judgments in determining the provision for taxes related to calculation of tax credits, benefits, and deductions. Further judgments are required in the calculation of certain tax assets and liabilities that arise from differences in the revenue and expense recognition timing. Changes in the assumptions behind these estimates may result in an increase or decrease to Intel's tax provisions. These tax related assumptions also provide another accounting flexibility knob.

**Inventory** - Semiconductor-based products can be considered end-products at various stages of development. Intel has to decide at what point product costs change from R&D expenditures, which would be expensed in the current period, to cost of sales, which could be deferred. This point may be different for different customers providing Intel some flexibility regarding how to expense costs. Intel's inventory valuation is another area providing accounting flexibility. Their inventory is valued at the lower of cost or market based upon assumptions concerning future demand and market conditions. Some of the factors considered are: customer base, stage of the product life cycle, consumer confidence, customer acceptance and an assessment of selling price in relation to product cost. If the estimated value of the inventory is less than the carrying value, Intel writes down the inventory and records the difference as a charge to cost of sales. A final aspect on inventory concerns obsolete inventory. Intel's valuation of inventory requires an estimation of obsolete inventory. To do this, a demand forecast is utilized. This is then compared to inventory levels. If the demand forecast

---

<sup>31</sup> [www.intc.com/intel-annual-report/2013/10K/28-critical-accounting-estimates.html](http://www.intc.com/intel-annual-report/2013/10K/28-critical-accounting-estimates.html)

for specific products is less than inventory levels, the excess products are written off. These estimation models are highly sensitive to assumptions, giving Intel plenty of accounting flexibility by designating 'obsolete' inventory.

Loss Contingencies - This final area also gives Intel considerable accounting flexibility. As a leader in the industry, Intel is constantly subjected to various legal and administrative proceedings with potential financial claims. Further, there is always the potential that product issues will occur while they are still under warranty. Based on these potential claims, Intel estimates a loss recognized as a charge to income, even if the loss has not occurred (and may not occur). This is similar to making an allowance for uncollected accounts. The amount set-aside for loss contingencies is highly subjective and is definitely another 'tool' Intel could use to smooth earnings.

### ***Strategy***

As demonstrated above, Intel has significant accounting flexibility. The question, however, is whether or not they are using this flexibility to accurately communicate Intel's economic situation or using it to hide something. By comparing Intel's policies to others in the industry, we can get a first look at potential irregularities. As noted in the Policies section, Intel's accounting policies are in alignment with other companies in the semiconductor industry such as TXN and AMD.

Managers could also be tempted to use this flexibility to manage earnings. Intel managers, however, would not be doing this to avoid triggering debt covenants, since Intel has more than enough cash to pay off their long-term debt. One possibility, however, is accounting-based compensation. Over the last 3-years, the top 7 executives at Intel had

compensation of \$187 million. Most of this was in the form of stock and stock options (\$130 million)<sup>32</sup>. Clearly, there is motive for these managers to keep the stock climbing. Another motive for Intel's accounting practices is to minimize the tax burden. Intel is pretty open about this, stating that profits made in another country will stay there for reinvestment purposes versus bring the profits back to the U.S. where they would be taxed.

There were several accounting changes in 2011 and 2012<sup>33</sup>. In 2011, Intel adopted a policy concerning revenue recognition related to multiple deliverables. This change simply allowed Intel to modify the method by which revenue is allocated to the separately identified deliverables (recurring software subscription versus a one time hardware purchase by the same customer). According to Intel, this change had no material impact. There were two other changes, one in 2011 and one in 2012, that had no material impact, but paved the way for more accounting flexibility. Specifically, the changes allow Intel to assess qualitative factors in determining whether the fair value of an asset's goodwill and long-lived assets are going to be less than its carrying value. These qualitative factors add to the subjectivity in assessing the fair value of these items.

Overall, the accounting strategy used by Intel seems to accurately represent the company's financial activity and health. Their policies and estimates seem realistic and no business transactions seem out of place. While it still remains true that Intel has significant accounting flexibility, Intel uses a conservative approach in alignment with industry norms. Finally, the auditor (Ernest & Young) has this to say, "...the financial statements referred to

---

<sup>32</sup> [www.intc.com/IntelProxy2014/58-executive-compensation.html](http://www.intc.com/IntelProxy2014/58-executive-compensation.html)

<sup>33</sup> [www.intc.com/intel-annual-report/2013/10K/58-accounting-changes.html](http://www.intc.com/intel-annual-report/2013/10K/58-accounting-changes.html)

above present fairly, in all material respects, the consolidated financial position of Intel Corporation at December 28, 2013 and December 29, 2012". Additionally, they state, "Intel Corporation maintained, in all material respects, effective internal control over financial reporting as of December 28, 2013".

### ***Disclosure Quality***

Annual reports can be over a 100 pages. The latest from Intel is 140 pages. Within those pages, companies have a choice on making it more or less easy for someone to assess the company's accounting quality and use the statements to understand the business reality of the firm. Overall, Intel appears to make an attempt to be as transparent as possible with their financial reporting. While some aspects of the accounting procedures are subjective and accounting changes made in 2011 and 2012 increase this qualitative approach, this seems to have been done to increase the level of fidelity into specific elements of revenue streams versus just aggregating them in one number that is reported.

The Executive Letters accompanying Intel's annual report are primarily cheerleading and motivational speech. However, the Management's Discussion and Analysis of Financial Condition and Results (MD&A) section is comprehensive and detailed. The MD&A does an excellent job of laying out the industry conditions, Intel's competitive position and Intel's plans for the future.

Early in the MD&A section, Intel lays out the Critical Accounting Estimates. While this is also true for TXN and AMD, Intel provides more than GAAP "requires us to make estimates and judgments". Intel characterizes the main areas where estimates and judgments are involved and then provides detailed information on each of these areas. Further, Intel makes use of the



footnotes to explain the accounting policies and assumptions for the way the data are presented. Intel also does a good job of explaining the rationale behind various accounting changes and their impact on the presentation of financial results.

Intel has grown beyond just being a semiconductor chip maker. The company also provides mobile components such as WiFi products, radio frequency transceivers, Bluetooth products, power management chips and global navigation satellite system components. In addition, through various company acquisitions, Intel now offers network and content security as well as security software products for consumer, mobile, and corporate environments. Each of these segments has different accounting practices. Intel provides excellent discussion and breaks down the overall top-line, providing insight into the health of each of its business segments.

Finally, Intel has an extensive Investor Relations site. It contains the latest Intel corporate events, news releases and financial statements. Further, it contains an archive of past news and financial releases. It is also the location where Intel posts the latest quarterly financial releases. Overall, Intel has a high quality of disclosure and does a great job of explaining their assumptions, accounting policies behind the numbers throughout their financial statements; and then making this information available.

### ***Red Flags***

As just noted, the Intel Financial Statements provide a very high level of disclosure quality. Based on this, there are few areas where the accounting should be called into question. Specifically, there were no unexplained increases in contingencies or significant off-

balance-sheet arrangements. Further, the only changes in accounting were to increase the financial transparency related to revenue streams in different business segments.

Before discounting any potential Red Flags, a couple of quantitative checks can be performed. The following table shows a comparison of 2009 to 2013 for: accounts receivable in relation to sales increases, inventories in relation to sales increases, reported income and cash flow from operating activities and reported income and taxable income.

<b>Accounting Analysis Indicators</b>	2009	2010	2011	2012	2013
<b>Receivables to Sales</b>	6.47%	6.57%	6.82%	7.57%	6.99%
<b>Inventories to Sales</b>	8.36%	8.61%	7.59%	8.87%	7.92%
<b>Net Income to Cash Flow</b>	31.9%	55.6%	53.9%	49.7%	46.8%
<b>Net Income to Pre-Taxable Income</b>	76.6%	71.4%	72.8%	74.0%	76.3%

The first indicator, Receivables to Sales, can provide insight on if the company is relaxing its credit policies or artificially loading up its distribution channels. The above numbers for Intel don't suggest this happening. The second indicator, Inventories to Sales, could be an indicator that demand for products are slowing. Again, the above numbers don't suggest this is the case. The third indicator, Net Income to Cash Flow, could indicate changes in the firm's accrual estimates. It is assumed that the 2009 number is due to the recession; otherwise the numbers are fairly consistent year-over-year. Finally, Net Income to Pre-Tax Income increases could indicate that financial reporting to shareholders has become more aggressive. All of these qualitative and quantitative measures provide no warning of Red Flags on Intel's Financial Statements.

### ***Distortions***

The purpose of this section was to evaluate the degree to which Intel's accounting captures its true business practices and to provide an indication of the credibility behind Intel's

numbers. After analyzing Intel's Financial Statements, the analysis suggests the data in Intel's financial reports clearly and accurately reflect the financial health of the firm. There were no questionable practices that would lead one to believe that Intel's management was trying to misrepresent the numbers. All changes in accounting were documented with the rationale and the impact on the financial statements. While Intel's accounting policies provide ample accounting flexibility, the accounting analysis suggests Intel is applying these policies responsibly while documenting their actions and logic in the footnotes. Because of the above findings, no adjustments to the financial statements are necessary.

### **Financial Analysis**

The financial statements of a company contain information that reveal the company's financial position. This information can be combined using various ratios to assess the company's financial health. This section is focused on using the financial information in Intel's financial statements, as well as Intel's primary competitors (Advanced Micro Devices (AMD) & Texas Instruments (TXN)), to see where Intel stands with respect to those competitors and the industry (average of INTC, AMD & TXN). The key areas examined are: Return on Equity Decomposition, Profitability, Asset Management, Liquidity, Debt & Coverage and Sustainable Growth. The data examined covers 31 Dec 2004 to 31 Dec 2013.

#### ***Return on Equity Decomposition***

This section will breakdown Intel's Return on Equity (ROE) into its building blocks to yield a deeper understanding of Intel's strategic, investment and financing decisions. These basic building blocks for Intel will also be compared to the build blocks for two of Intel's competitors (TXN and AMD). The breakdown of ROE is as follows:

$$\text{ROE} = (\text{Income}/\text{Equity})$$

$$= (\text{income}/\text{assets}) \times (\text{assets}/\text{equity})$$

$$= (\text{income}/\text{sales}) \times (\text{sales}/\text{assets}) \times (\text{assets}/\text{equity})$$

The following tables show the ROE breakdown for Intel as well as TXN and AMD.

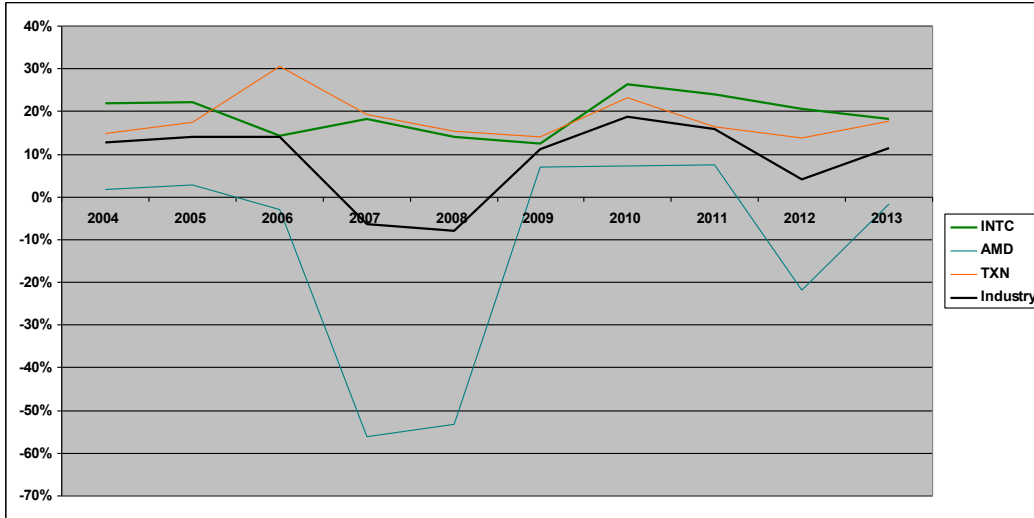
INTC (\$ millions)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Net Income</b>	7,516	8,664	5,044	6,976	5,292	4,369	11,464	12,942	11,005	9,620
<b>Sales</b>	34,209	38,826	35,382	38,334	37,586	35,127	43,623	53,999	53,341	52,708
<i>Net Profit Margin (ROS)</i>	21.97%	22.31%	14.26%	18.20%	14.08%	12.44%	26.28%	23.97%	20.63%	18.25%
<b>Total Assets</b>	48,143	48,314	48,368	55,651	50,715	53,095	63,186	71,119	84,351	92,358
<i>Asset Turnover</i>	0.71	0.80	0.73	0.69	0.74	0.66	0.69	0.76	0.63	0.57
<i>Return on Assets</i>	15.61%	17.93%	10.43%	12.54%	10.43%	8.23%	18.14%	18.20%	13.05%	10.42%
<b>Shareholders Equity</b>	38,579	36,182	36,752	42,762	39,088	41,704	49,430	45,911	51,203	58,256
<i>Financial Leverage</i>	1.25	1.34	1.32	1.30	1.30	1.27	1.28	1.55	1.65	1.59
<i>Return on Equity</i>	19.48%	23.95%	13.72%	16.31%	13.54%	10.48%	23.19%	28.19%	21.49%	16.51%

AMD (\$ millions)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Net Income</b>	91	165	-166	-3,379	-3,098	376	471	491	-1,183	-83
<b>Sales</b>	5,001	5,848	5,649	6,013	5,808	5,403	6,494	6,568	5,422	5,299
<i>Net Profit Margin (ROS)</i>	1.82%	2.83%	-2.94%	-56.19%	-53.34%	6.96%	7.25%	7.48%	-21.82%	-1.57%
<b>Total Assets</b>	7,844	7,288	13,147	11,550	7,675	9,078	4,964	4,954	4,000	4,337
<i>Asset Turnover</i>	0.64	0.80	0.43	0.52	0.76	0.60	1.31	1.33	1.36	1.22
<i>Return on Assets</i>	1.16%	2.27%	-1.26%	-29.26%	-40.36%	4.14%	9.49%	9.91%	-29.58%	-1.91%
<b>Shareholders Equity</b>	3,010	3,352	5,785	2,990	-82	648	1,013	1,590	538	544
<i>Financial Leverage</i>	2.61	2.17	2.27	3.86	-93.60	14.01	4.90	3.12	7.43	7.97
<i>Return on Equity</i>	3.03%	4.94%	-2.87%	-113.01%	3778.05%	58.02%	46.50%	30.88%	-219.89%	-15.26%

TXN (\$ millions)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Net Income</b>	1,861	2,324	4,341	2,657	1,920	1,470	3,228	2,236	1,759	2,162
<b>Sales</b>	12,580	13,392	14,195	13,835	12,501	10,427	13,966	13,697	12,690	12,205
<i>Net Profit Margin (ROS)</i>	14.79%	17.35%	30.58%	19.20%	15.36%	14.10%	23.11%	16.32%	13.86%	17.71%
<b>Total Assets</b>	16,299	15,063	13,930	12,667	11,923	12,119	13,401	20,497	20,021	18,938
<i>Asset Turnover</i>	0.77	0.89	1.02	1.09	1.05	0.86	1.04	0.67	0.63	0.64
<i>Return on Assets</i>	11.42%	15.43%	31.16%	20.98%	16.10%	12.13%	24.09%	10.91%	8.79%	11.42%
<b>Shareholders Equity</b>	13,063	11,937	11,360	9,975	9,326	9,722	10,437	10,952	10,961	10,807
<i>Financial Leverage</i>	1.25	1.26	1.23	1.27	1.28	1.25	1.28	1.87	1.83	1.75
<i>Return on Equity</i>	14.25%	19.47%	38.21%	26.64%	20.59%	15.12%	30.93%	20.42%	16.05%	20.01%

What follows is a comparison of Net Profit Margin, Asset Turnover and Financial Leverage across Intel, TXN, AMD as well as the industry average. Return on Equity and Return on Assets will not be covered here since they will be covered in a later section. The following is the data for Net Profit Margin for the 10 year period.

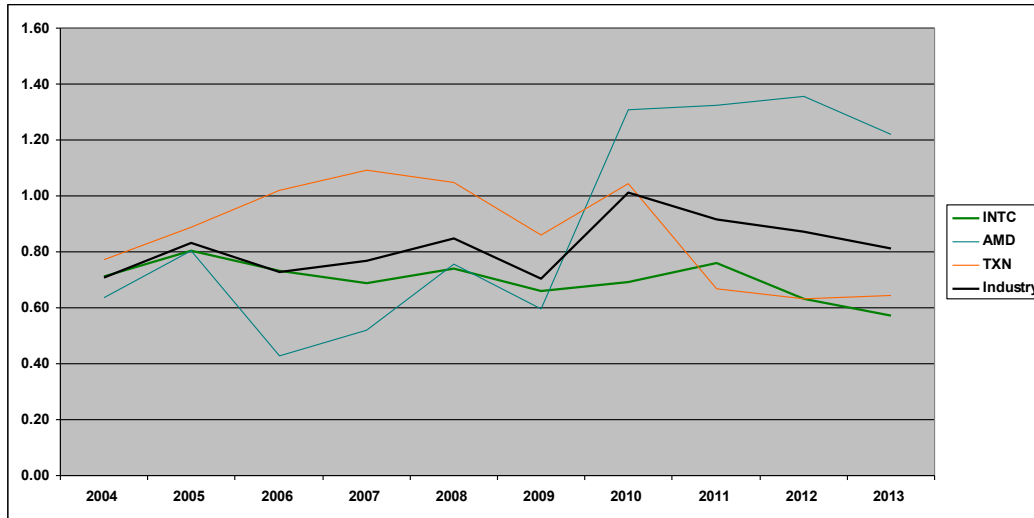
<b>Net Profit Margin</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	22%	22%	14%	18%	14%	12%	26%	24%	21%	18%
<b>AMD</b>	2%	3%	-3%	-56%	-53%	7%	7%	7%	-22%	-2%
<b>TXN</b>	15%	17%	31%	19%	15%	14%	23%	16%	14%	18%
<b>Industry</b>	13%	14%	14%	-6%	-8%	11%	19%	16%	4%	11%



Net Profit Margin is an indication of how much the firm keeps as profits for every dollar in revenue. The above chart is not as clear cut as Gross Profit Margin. However, the above chart does show that Intel consistently leads the industry over the entire timeframe. Overall, Intel is consistent with TXN over this timeframe with an average Gross Profit Margin of 19%. This consistency lends strong credibility to Intel's management that they will continue to convert sales in to profits.

Next, the Asset Turnover data for the 10 year period is as follows.

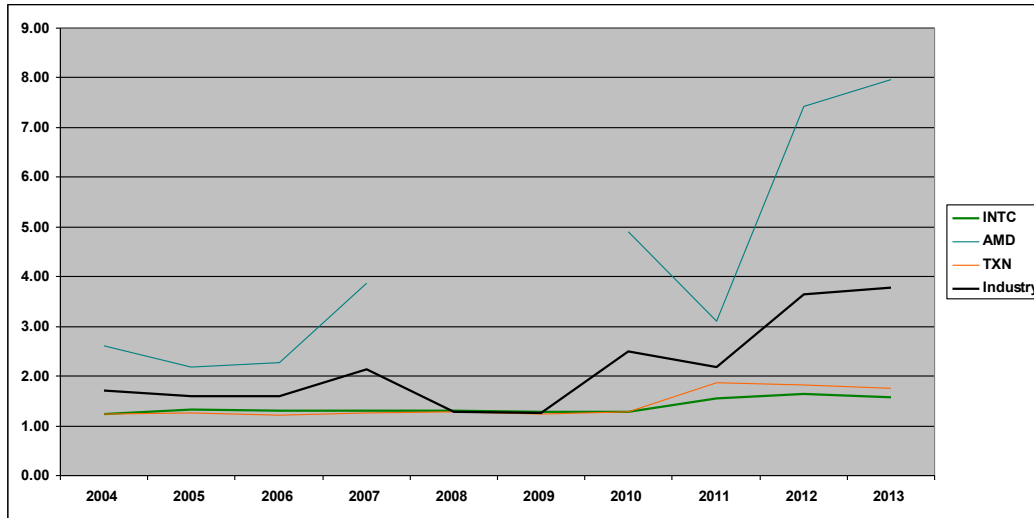
<b>Asset Turnover</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	0.71	0.80	0.73	0.69	0.74	0.66	0.69	0.76	0.63	0.57
<b>AMD</b>	0.64	0.80	0.43	0.52	0.76	0.60	1.31	1.33	1.36	1.22
<b>TXN</b>	0.77	0.89	1.02	1.09	1.05	0.86	1.04	0.67	0.63	0.64
<b>Industry</b>	0.71	0.83	0.73	0.77	0.85	0.71	1.01	0.92	0.87	0.81



The Asset Turnover indicates how many sales dollars the firm is able to generate for each dollar in assets. At first glance, this appears to be the first indicator where Intel does not dominate or at least perform in the top of the industry. This seems at odds with all of the other data and may be the result of several factors. Specifically, as noted in the Strategy section, Intel dominates the semiconductor industry through a strategy of differentiation where the company spends over \$5 billion a year on research and development. Additionally, Intel is a semiconductor manufacturing powerhouse. While Intel may be tremendously successful in manufacturing state-of-the-art semiconductors at scale, it isn't cheap. The above data could suggest that it is expensive to be and stay at the top.

The final indicator will be Financial Leverage with data for the 10 year period as follows.

<b>Financial Leverage</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	1.25	1.34	1.32	1.30	1.30	1.27	1.28	1.55	1.65	1.59
<b>AMD</b>	2.61	2.17	2.27	3.86			4.90	3.12	7.43	7.97
<b>TXN</b>	1.25	1.26	1.23	1.27	1.28	1.25	1.28	1.87	1.83	1.75
<b>Industry</b>	1.70	1.59	1.60	2.14	1.29	1.26	2.49	2.18	3.64	3.77



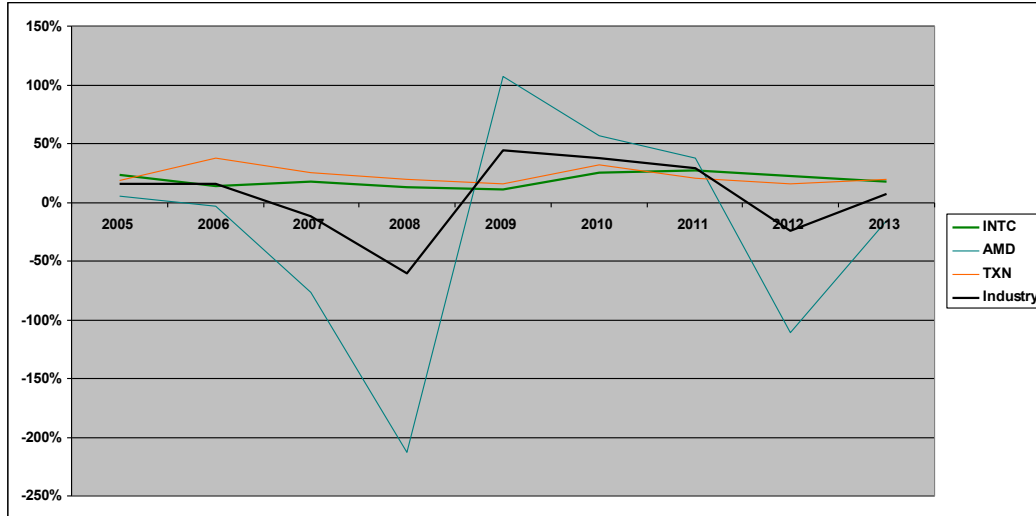
Financial leverage indicates how many dollars of assets the firm is able to deploy for each dollar invested by shareholders. As can be seen in the chart, AMD's financial leverage is quite volatile and two years (2008 and 2009) had to be removed to accurately see the data for Intel and TXN. Intel's financial leverage, on the other hand, is very consistent over the 10-year period, but did see a jump in 2011 associated with various acquisitions. This suggests Intel follows a very disciplined approach to using leverage for growth.

### **Profitability**

For profitability, three ratios are investigated: Return on Equity, Return on Assets and Gross Profit Margin. The Return on Equity data for the 10 year period is shown below.

<b>Return on Common Equity</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	NA	23%	14%	18%	13%	11%	25%	27%	23%	18%
<b>AMD</b>	NA	5%	-4%	-77%	-213%	107%	57%	38%	-111%	-15%
<b>TXN</b>	NA	19%	37%	25%	20%	15%	32%	21%	16%	20%
<b>Industry</b>	NA	16%	16%	-12%	-60%	45%	38%	29%	-24%	7%

NA = Not available



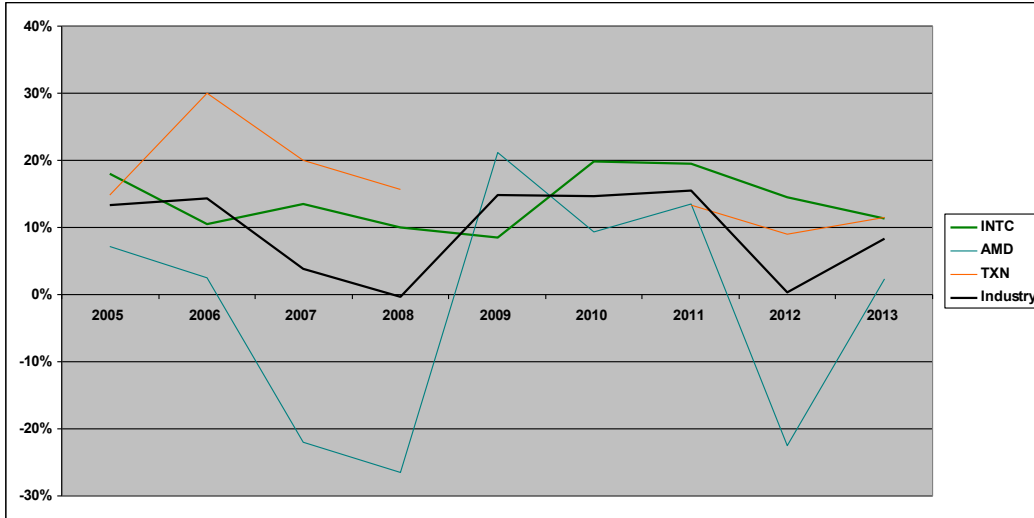
Return on Equity (ROE) is a comprehensive indicator of a firm's performance because it provides an indication of how well managers are employing the funds invested by the firm's shareholders to generate returns. The above data show INTC had a positive ROE over the entire timeframe. Additionally, the INTC average ROE over the time frame was 19% compared with the industry average of 6%. Also of note is that the variability of the INTC ROE is lower than both TXN and AMD. This low variability, positive ROE suggests a well thought out strategy is being consistently applied by INTC management.

Next, the Return on Assets data for the 10 year period is as follows.

Return on Total Assets	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	NA	18%	10%	13%	10%	9%	20%	19%	14%	11%
<b>AMD</b>	NA	7%	3%	-22%	-27%	21%	9%	14%	-23%	2%
<b>TXN</b>	NA	15%	30%	20%	16%			13%	9%	11%
<b>Industry</b>	NA	13%	14%	4%	0%	15%	15%	15%	0%	8%

NA = Not available

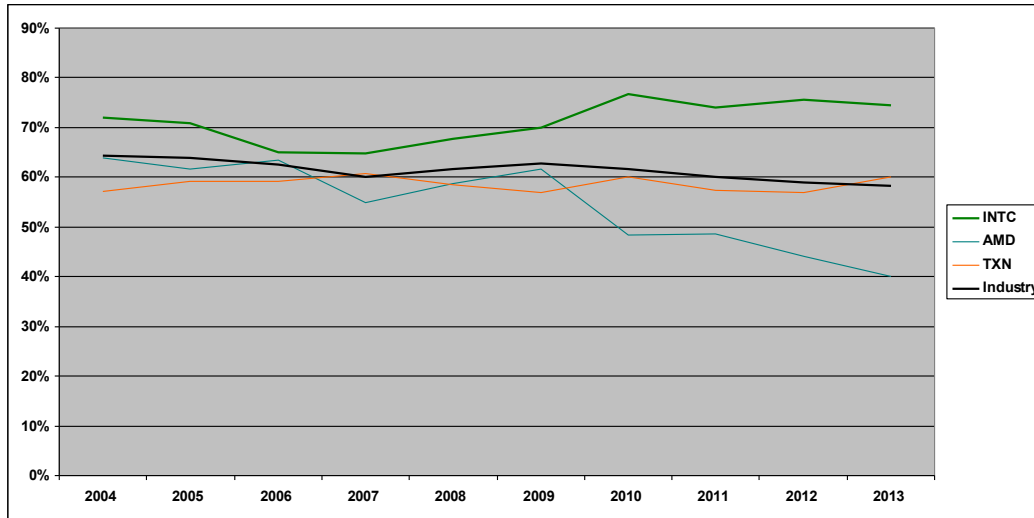




Return on Assets (ROA) tells how much profit a company is able to generate for each dollar of assets invested. ROA is generally seen as a barometer of how efficient management is at using its assets to generate earnings. The above data show INTC had a positive ROA over the entire timeframe. Additionally, the INTC average ROA over the time frame was 14% compared with the industry average of 9%. Also of note, is that the variability of the INTC ROA is lower than both TXN and AMD. Similar to the ROE insight, this low variability, positive ROA is a confirmation indicator suggesting a well thought out strategy is being consistently applied by INTC management.

The final profitability measure examined in this section is Gross Profit Margin. The Gross Profit Margin data for the 10 year period is as follows.

<b>Gross Profit Margin</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	72%	71%	65%	65%	68%	70%	77%	74%	76%	74%
<b>AMD</b>	64%	62%	63%	55%	59%	62%	48%	49%	44%	40%
<b>TXN</b>	57%	59%	59%	61%	59%	57%	60%	57%	57%	60%
<b>Industry</b>	64%	64%	63%	60%	62%	63%	62%	60%	59%	58%

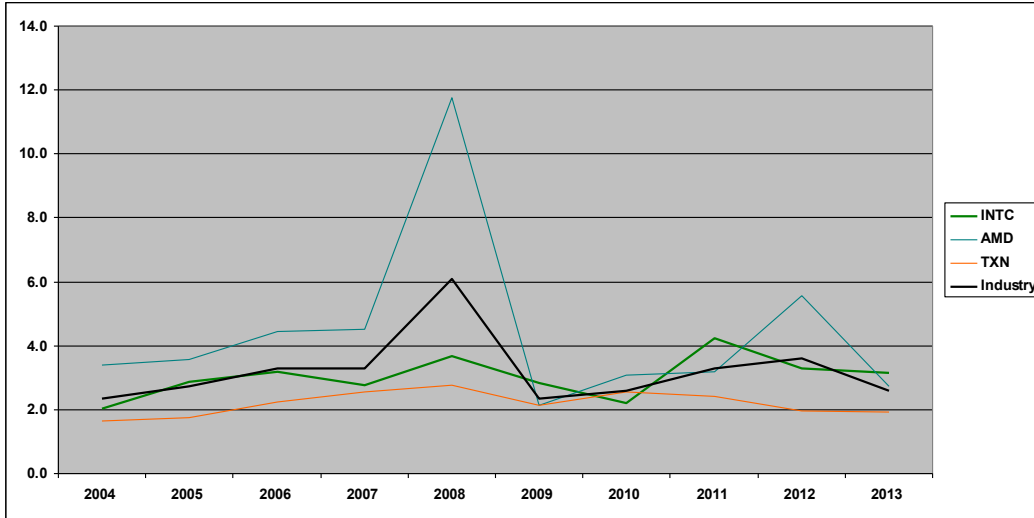


Gross Profit Margin is an indication of the extent to which revenues exceed direct costs associated with sales. Gross Profit Margin is influenced by two factors: 1) the price premium that a firm's products command in the market place, and 2) the efficiency of the firm's procurement and product process. The above data show INTC consistently outpaced the its competitors on Gross Profit Margin over the entire timeframe. Specifically, INTC surpassed the Industry average by 10 percentage points. INTC dominance on this measure is attributable to their brand value which allows them to command a premium for INTC products and their superior manufacturing processes that allow them to keep costs as low as possible.

### **Asset Management**

For asset management, two ratios are investigated: Operating Working Capital Turnover and Inventory Turnover. The Operating Working Capital Turnover data for the 10 year period is shown below.

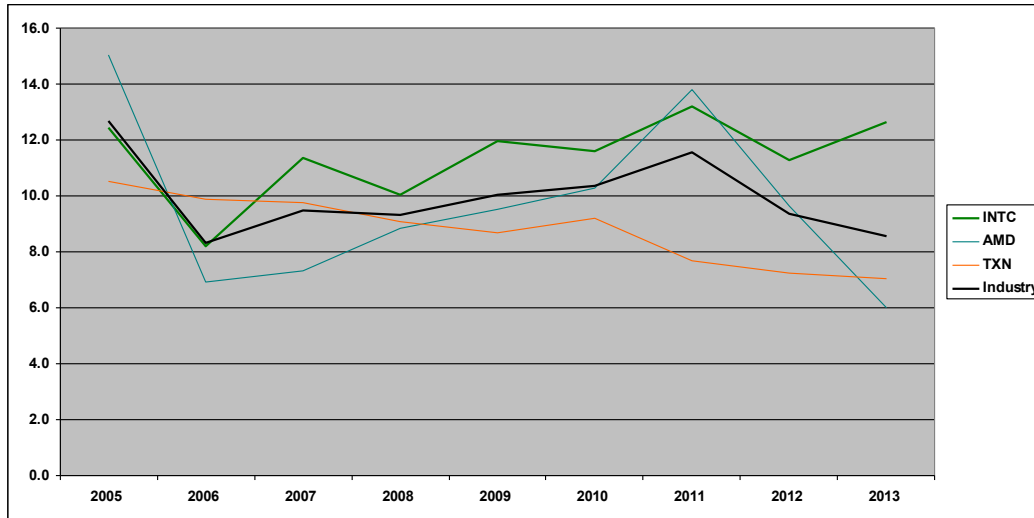
<b>Operating Working Capital Turnover</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	2.0	2.9	3.2	2.8	3.7	2.8	2.2	4.2	3.3	3.1
<b>AMD</b>	3.4	3.6	4.4	4.5	11.8	2.1	3.1	3.2	5.6	2.7
<b>TXN</b>	1.7	1.7	2.2	2.5	2.8	2.1	2.5	2.4	1.9	1.9
<b>Industry</b>	2.4	2.7	3.3	3.3	6.1	2.4	2.6	3.3	3.6	2.6



Operating Working Capital Turnover compares the use of working capital to the generation of sales over a specified period. The capital is used to fund operations and purchase inventory. These are then converted into sales revenue for the company. In a general, the higher the working capital turnover, the better. The above data are inconclusive as to a firm that best uses Operating Working Capital. It should be noted, however, that INTC is the only firm with a positive trend over the 10 year time frame. This suggests they are increasing their ability maximize Operating Working Capital over time.

Next, the Inventory Turnover data for the 10 year period is as follows.

<b>Inventory Turnover</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	13.1	12.4	8.2	11.4	10.0	12.0	11.6	13.2	11.3	12.6
<b>AMD</b>	5.7	15.0	6.9	7.3	8.9	9.5	10.3	13.8	9.6	6.0
<b>TXN</b>	10.0	10.5	9.9	9.8	9.1	8.7	9.2	7.7	7.2	7.1
<b>Industry</b>	9.6	12.7	8.3	9.5	9.3	10.1	10.4	11.5	9.4	8.6

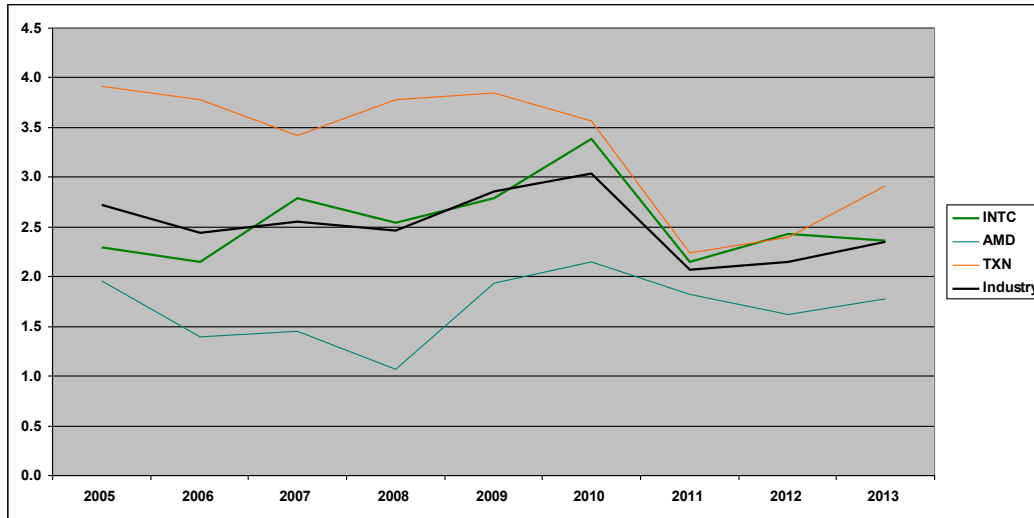


Inventory Turnover shows how many times a firm's inventory is sold and replaced over a specified period. A low turnover implies poor sales and excess inventory. A high ratio, on the other hand, implies strong sales. A low turnover can be especially troublesome if products are perishable and can deteriorate as they sit and wait to be sold. The above data again show the ability of INTC to effectively gauge market demand and not manufacture semiconductor products that will be out-of-date within 18 months.

### **Liquidity**

For liquidity, three ratios are investigated: Current Ratio, Quick Ratio and Operating Cash Flow Ratio. The Current Ratio data for the 10 year period is shown below.

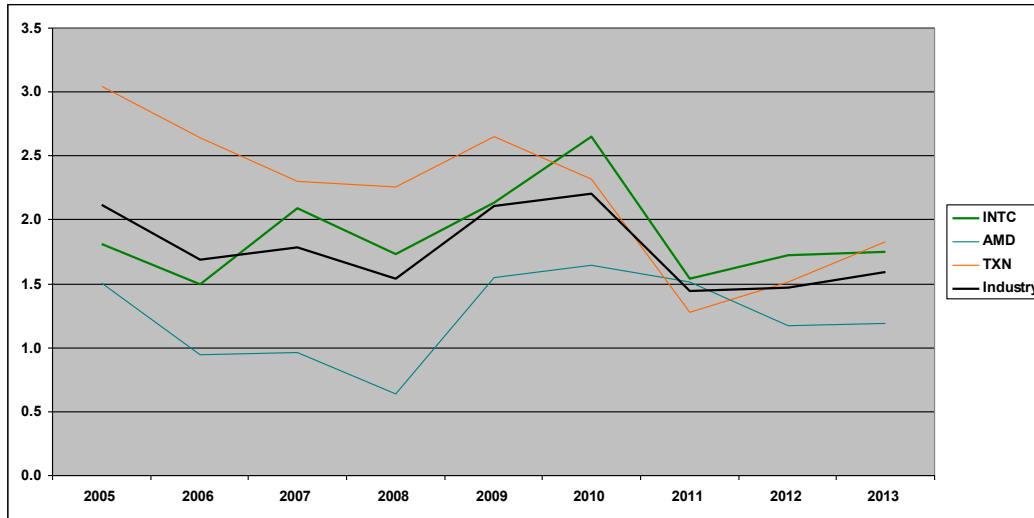
<b>Current Ratio</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	3.0	2.3	2.1	2.8	2.5	2.8	3.4	2.2	2.4	2.4
<b>AMD</b>	1.7	2.0	1.4	1.5	1.1	1.9	2.1	1.8	1.6	1.8
<b>TXN</b>	5.3	3.9	3.8	3.4	3.8	3.9	3.6	2.2	2.4	2.9
<b>Industry</b>	3.3	2.7	2.4	2.6	2.5	2.9	3.0	2.1	2.2	2.4



The Current Ratio is a widely accepted index of a firm's short-term liquidity. Analysts generally view a current ratio of more than one to be an indication that the firm can cover its current liabilities from the cash realized from its current assets. As shown above, INTC has maintained a healthy ability to cover its current liabilities using current assets with average of 2.5 times the amount of current assets required to cover current liabilities.

Next, the Quick Ratio data for the 10 year period is as follows.

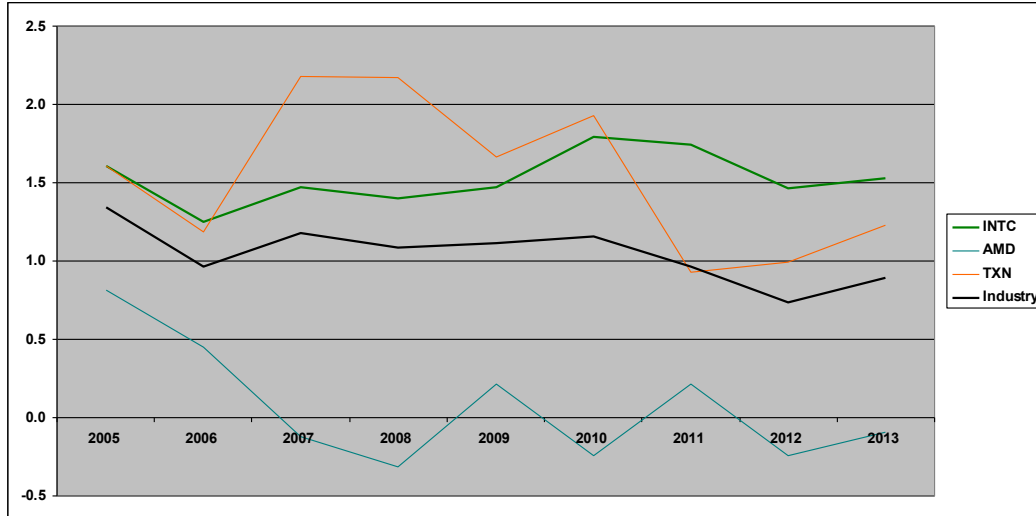
<b>Quick Ratio</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	2.5	1.8	1.5	2.1	1.7	2.1	2.7	1.5	1.7	1.8
<b>AMD</b>	1.0	1.5	0.9	1.0	0.6	1.5	1.6	1.5	1.2	1.2
<b>TXN</b>	4.2	3.0	2.6	2.3	2.3	2.6	2.3	1.3	1.5	1.8
<b>Industry</b>	2.6	2.1	1.7	1.8	1.5	2.1	2.2	1.4	1.5	1.6



The Quick Ratio, sometimes referred to as the acid test, is similar to the Current Ratio but only includes cash, cash equivalents and accounts receivable as part of the current assets. For INTC, it is safe to include accounts receivable since the creditworthiness of INTC's largest customers (Dell and Hewlett-Packard) are beyond dispute. Similar to the Current Ratio, a quick ratio of more than one is an indication that the firm can cover its current liabilities from cash, cash equivalents and accounts receivable. As shown above, INTC has maintained a healthy ability to cover its current liabilities using just cash, cash equivalents and accounts receivable with average of almost 2 times the liquid assets required to cover current liabilities.

The final liquidity measure examined is the Operating Cash Flow Ratio. The Operating Cash Flow Ratio data for the 10 year period is as follows.

Operating Cash Flow Ratio	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	1.6	1.6	1.2	1.5	1.4	1.5	1.8	1.7	1.5	1.5
<b>AMD</b>	0.6	0.8	0.5	-0.1	-0.3	0.2	-0.2	0.2	-0.2	-0.1
<b>TXN</b>	1.6	1.6	1.2	2.2	2.2	1.7	1.9	0.9	1.0	1.2
<b>Industry</b>	1.3	1.3	1.0	1.2	1.1	1.1	1.2	1.0	0.7	0.9

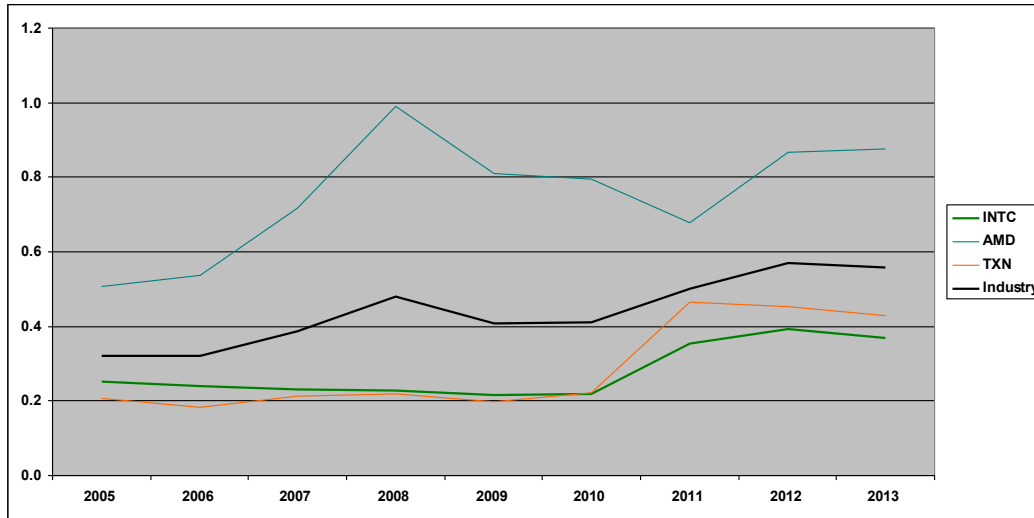


The Operating Cash Flow Ratio is a very conservative gauge of a company's liquidity in the short term. Using cash flow versus net income provides a better indication of liquidity since net income can include non-cash items which cannot be used to pay down liabilities. Specifically, this final measure focuses on the ability of the firm's operations to generate the resources needed to repay its current liabilities. As shown in the chart above, even if INTC's cash and equivalents as well as accounts receivable were gone, INTC's on-going business operations could produce enough cash to pay its liabilities over the next year.

### ***Debt & Coverage***

For Debt & Coverage, three ratios are investigated: Debt to Assets, Debt to Equity and Interest Coverage. The Debt to Assets ratio data for the 10 year period is shown below.

<b>Debt to Assets</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4
<b>AMD</b>	0.5	0.5	0.5	0.7	1.0	0.8	0.8	0.7	0.9	0.9
<b>TXN</b>	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.4
<b>Industry</b>	0.3	0.3	0.3	0.4	0.5	0.4	0.4	0.5	0.6	0.6

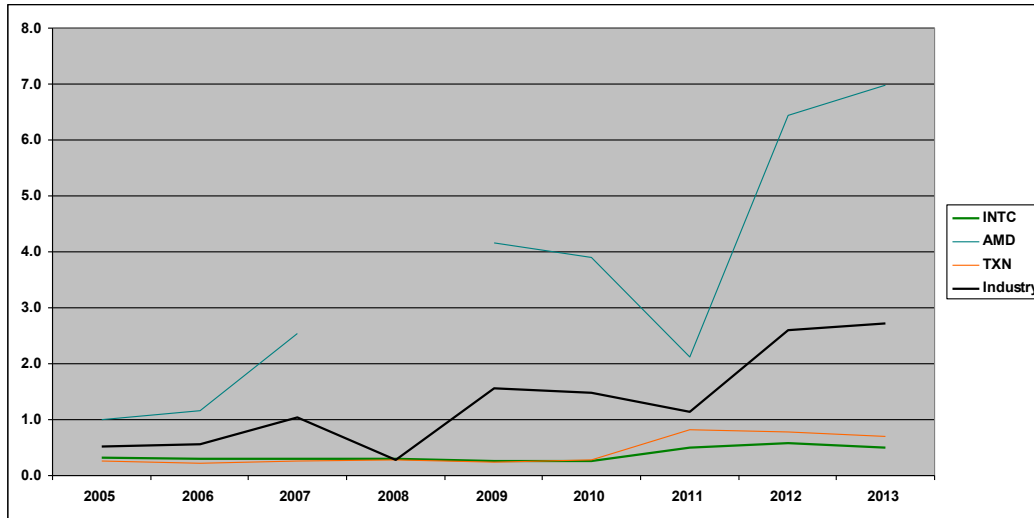


Debt to Assets provides insight on how leveraged a company is by defining the total amount of debt relative to total assets. This point-of-view enables comparisons of leverage across different companies. The higher the ratio, the higher the degree of leverage, and consequently, higher financial risk. For lenders, this also provides insight into assets that could be sold to cover liabilities if liquidation was required. As can be seen in the above chart, INTC is not as leveraged as other firms in the industry and has over 2.5 times the assets required to cover liabilities. Of note is the Debt to Assets increase starting in 2011. This is primarily associated with an increase in long-term debt (\$2 billion (2010) to \$13 billion (2012)) related to company acquisitions. Over the same time, assets increased from \$63 billion to \$84 billion.

Next, the Debt to Equity Ratio data for the 10 year period is as follows.

<b>Total Debt / Common Equity</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.6	0.5
<b>AMD</b>	1.0	1.0	1.2	2.5	86.2	4.2	3.9	2.1	6.4	7.0
<b>TXN</b>	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.8	0.8	0.7
<b>Industry</b>	0.5	0.5	0.6	1.0	28.9	1.6	1.5	1.1	2.6	2.7

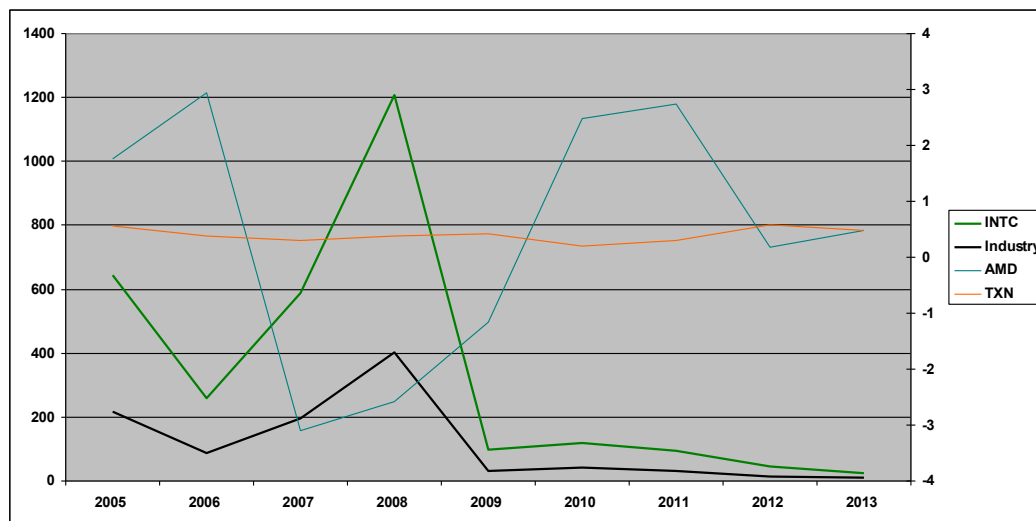




The Debt to Equity Ratio is a measure of a firm's financial leverage calculated by dividing total liabilities by stockholders' equity. The ratio indicates what proportion of equity and debt the firm is using to finance its assets. A high debt to equity ratio generally means a company has been aggressive in financing its growth with debt versus retained earnings. This can result in pressure on earnings as a result of the additional interest expense on the debt. On the other hand, if debt is used to finance increased operations, the firm could potentially generate more earnings than it would have without the financing. If the increased operations were to increase earnings by a greater amount than the interest on the debt, then the shareholders would benefit as more earnings are being spread among the same amount of shareholders. This is the case for INTX. As can be seen in the above chart, the INTX Debt to Equity Ratio increases in 2011. This increase is associated with total liabilities going from \$13 billion to \$33 billion. However, over the same period of time, net sales increased \$10 billion and gross profit increased \$7 billion.

Finally, the Interest Coverage Ratio data for the 10 year period is as follows.

<b>Interest Coverage</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	205.8	643.7	258.6	589.7	1208.0	99.3	119.4	93.9	44.4	25.6
<b>AMD</b>	1.9	1.8	2.9	-3.1	-2.6	-1.2	2.5	2.8	0.2	0.5
<b>TXN</b>	0.7	0.6	0.4	0.3	0.4	0.4	0.2	0.3	0.6	0.5
<b>Industry</b>	69.5	215.3	87.3	195.6	401.9	32.9	40.7	32.3	15.0	8.8

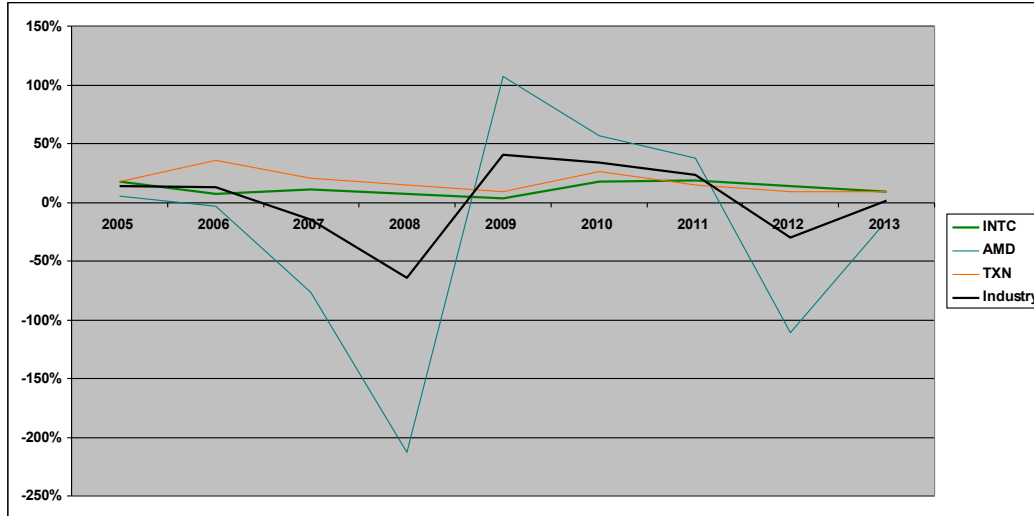


This ratio indicates the dollars of cash generated by operations for each dollar of required interest payment. This ratio is almost not comparable. Intel has so much cash, its ratio had to be put on a different axis so AMD and TXN could be seen. Further, Intel's high ratio skews the industry average. It goes without saying, Intel generates more than enough cash to cover its long-term debt interest payments.

### ***Sustainable Growth***

The Sustainable Growth data for the 10 year period is as follows.

<b>Sustainable Growth Rate</b>	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>INTC</b>	NA	18%	7%	11%	7%	3%	17%	18%	14%	9%
<b>AMD</b>	NA	5%	-4%	-77%	-213%	107%	57%	38%	-111%	-15%
<b>TXN</b>	NA	17%	36%	21%	14%	9%	26%	15%	9%	9%
<b>Industry</b>	NA	13%	13%	-15%	-64%	40%	33%	24%	-30%	1%



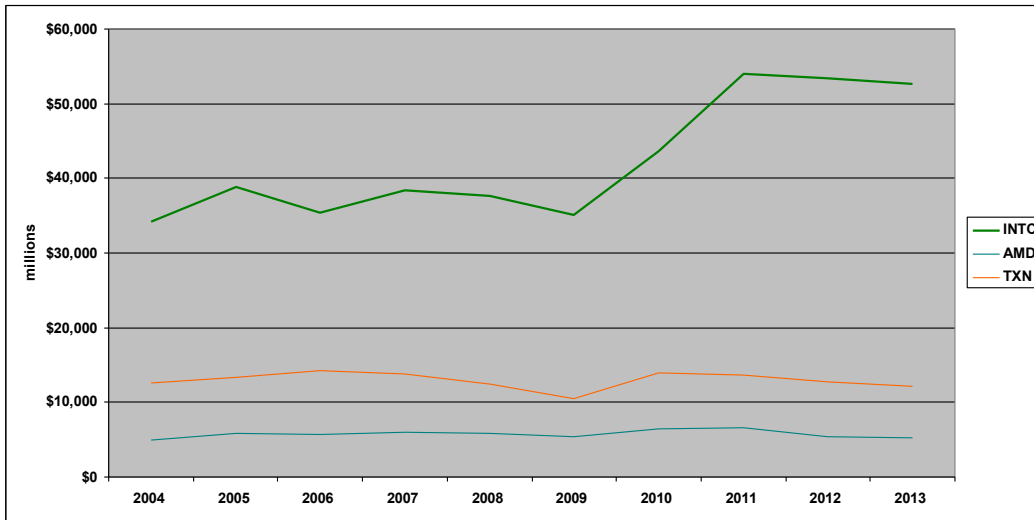
Sustainable Growth Rate is the rate at which a firm can grow while keeping its profitability and financial policies unchanged. A firm's Return on Equity and its dividend payout policy determine the pool of funds available for growth. The sustainable growth rate provides a benchmark against which a firm's growth plans can be evaluated. As can be seen in the above chart, INTC's Sustainable Growth Rate is positive across the entire timeframe unlike AMD, which has a lot of volatility. INTC's average Sustainable Growth Rate over this timeframe is a healthy 12%.

### **Forecasting**

This section covers a quantitative way to summarize what has been learned through the previous sections of business strategy analysis, accounting analysis and financial analysis. Further, this summary is presented in terms of a forward-looking view on which to base financial decisions. The overall approach to making these estimates is to extrapolate historical data as well as ratios, and then adjust that data based on known mathematical behaviors (i.e., mean reverting), industry trends and company outlook as reflected in the company's financial statements. These elements are combined to make a 5-year forecast on key financials for Intel.

## Sales

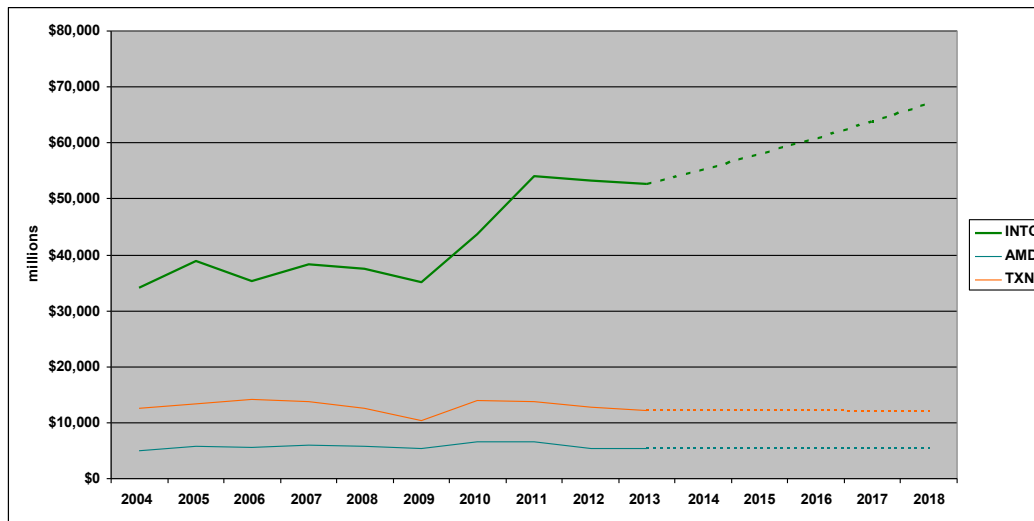
The Sales Forecast will be based on Intel's sales data for the last 10 years. The sales data along with Intel's competitors is shown in the chart below. The chart suggests Intel had growth



of about 5% per annum over the 10 year period. However, this growth is primarily attributed to acquisitions in the 2010-2011 timeframe. Intel's existing operations are likely to be consistent with industry trends which is flat as seen in the historical sales for TXN and AMD<sup>34</sup>. While future Intel acquisitions cannot be predicted, it is likely, given Intel's large amount of cash (\$22 billion) and their high profit margins (18%), which will generate more cash in the future. Due to Intel's dominance in the areas where it operates, acquisitions are really its only means of significant revenue growth. Intel's continued interest in cloud computing and big data suggests these are likely the segments Intel will target. Based on an assumption of continued growth through acquisitions, a conservative assessment is that Intel's growth over the next 5 years will follow a trend similar to the last 10 years of annual growth or 5% per annum. Similarly, TXN and AMD will grow at less than 1% per a year as shown in the following table and chart.

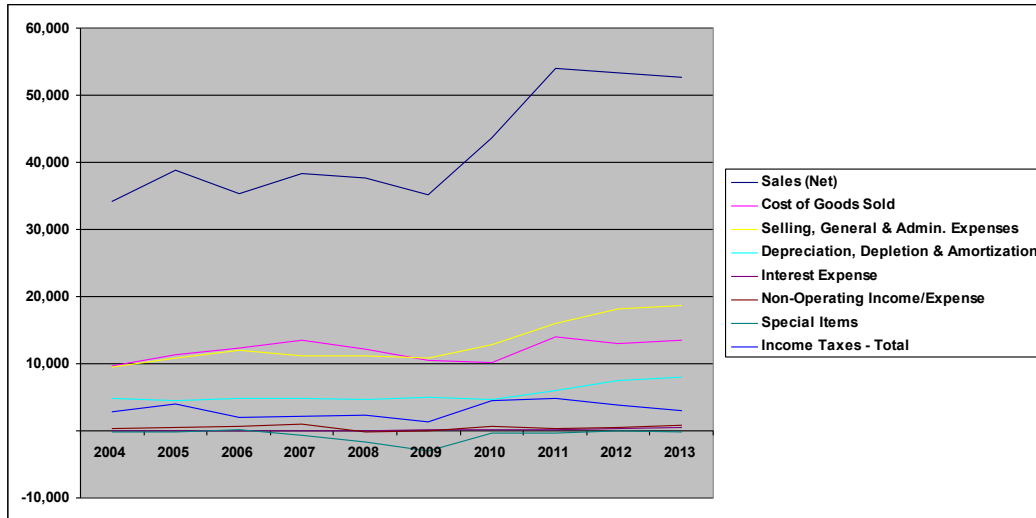
<sup>34</sup> [www.intc.com/intel-annual-report/2013/10K/26-Overview.html](http://www.intc.com/intel-annual-report/2013/10K/26-Overview.html)

Sales	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
INTC	\$34,209	\$38,826	\$35,382	\$38,334	\$37,586	\$35,127	\$43,623	\$53,999	\$53,341	\$52,708	\$55,301	\$58,022	\$60,877	\$63,873	\$67,015
AMD	\$5,001	\$5,848	\$5,649	\$6,013	\$5,808	\$5,403	\$6,494	\$6,568	\$5,422	\$5,299	\$5,333	\$5,367	\$5,402	\$5,437	\$5,472
TXN	\$12,580	\$13,392	\$14,195	\$13,835	\$12,501	\$10,427	\$13,966	\$13,697	\$12,690	\$12,205	\$12,164	\$12,123	\$12,083	\$12,042	\$12,002



## Income

With a 5-year sales estimate, an income estimate can also be forecasted. First however, a number of assumptions need to be made. These assumptions concern financial data elements related to Cost of Goods Sold, Selling, General & Admin. Expenses, Depreciation, Depletion & Amortization, Interest Expense, Non-Operating Income/Expense, any Special Items and Income Taxes. Similar to the Sales estimates, forecast assumptions for these data elements will be based on historical company data and historical industry data, as well as any relevant insights from the Intel financial statements. First, to establish a baseline, each of these historical data elements are compared to the sales in the same year as shown in the chart below.



From the above chart, it can be seen that all the variables seem roughly correlated to sales except Non-Operating Income/Expense and Special Items. To examine these numbers further, they are normalized relative to the sales numbers, yielding the table below along with averages for Intel's competitors.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Averages			
Sales (Net)	34,209	38,826	35,382	38,334	37,586	35,127	43,623	53,999	53,341	52,708				
Cost of Goods Sold	9,591	11,295	12,354	13,535	12,123	10,549	10,201	13,983	12,976	13,446				
Selling, General & Admin. Expenses	9,466	10,833	11,969	11,156	11,180	10,887	12,785	16,020	18,205	18,699				
Depreciation, Depletion & Amortization	4,860	4,468	4,852	4,798	4,619	5,052	4,638	6,064	7,522	8,032				
Interest Expense	50	19	24	15	8	87	134	191	330	490				
Non-Operating Income/Expense	277	539	725	965	-248	80	591	331	565	810				
Special Items	-102	-140	160	-629	-1,722	-2,928	-411	-291		-240				
Income Taxes - Total	2,901	3,946	2,024	2,190	2,394	1,335	4,581	4,839	3,868	2,991				
Cost of Goods Sold	.280	.291	.349	.353	.323	.300	.234	.259	.243	.255	.289	0.414	0.455	
Selling, General & Admin. Expenses	.277	.279	.338	.291	.297	.310	.293	.297	.341	.355	.308	0.267	0.419	
Depreciation, Depletion & Amortization	.142	.115	.137	.125	.123	.144	.106	.112	.141	.152	.130	0.092	0.139	
Interest Expense	.001	.000	.001	.000	.000	.002	.003	.004	.006	.009	.003	#N/A	0.041	
Non-Operating Income/Expense	.464	.464	.464	.464	.464	.464	.464	.464	.464	.464	.464	102	-38	
Special Items	-.630	-.630	-.630	-.630	-.630	-.630	-.630	-.630	-.630	-.630	-.630	-.83	-.210	
Income Taxes - Total	.085	.102	.057	.057	.064	.038	.105	.090	.073	.057	.073	0.055	0.004	

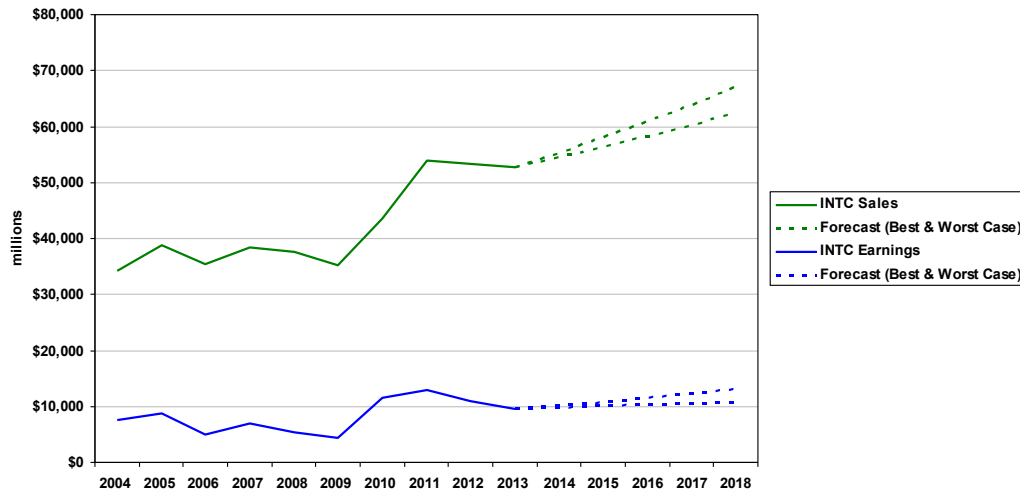
From this table, the first thing that can be seen is the values for Intel are consistent with the industry numbers based on Intel's place in the industry as a leader (i.e., Intel's lower cost of goods sold as a lead manufacturer). However, treating all the items as a percentage of sales may not be the best approach. For example, as sales go up and scale is achieved, cost of goods should logically go down. Based on this logic, Cost of Goods Sold, Selling, General & Admin.

Expenses, Depreciation, Depletion & Amortization assumptions will be based on a 5-year extrapolation of the last 10-years of data. Further, interest expense will be based on the most recent year (2013) due its climbing value. Its uncertain how high it will climb, however, Intel has enough cash (\$22B) to cover the current outstanding debt. The Non-Operating Income/Expense and Special Items will be based on the average over the last 10-years for these respective items. Finally, Income Taxes will be based on a percentage of Sales. The combination of these yield the following Intel income forecast.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sales (Net)	34,209	38,826	35,382	38,334	37,586	35,127	43,623	53,999	53,341	52,708	55,301	58,022	60,877	63,873	67,015
Cost of Goods Sold	9,591	11,295	12,354	13,535	12,123	10,549	10,201	13,983	12,976	13,446	13,403	13,573	13,727	13,864	13,980
GROSS PROFIT	24,618	27,531	23,028	24,799	25,463	24,578	33,422	40,016	40,365	39,262	41,899	44,450	47,150	50,009	53,035
Selling, General & Admin. Expenses	9,466	10,833	11,969	11,156	11,180	10,887	12,785	16,020	18,205	18,699	18,773	20,030	21,366	22,784	24,291
OPERATING INCOME BEFORE DEPREC	15,152	16,698	11,059	13,643	14,283	13,691	20,637	23,996	22,160	20,563	23,126	24,420	25,785	27,225	28,744
Depreciation, Depletion & Amortization	4,860	4,468	4,852	4,798	4,619	5,052	4,638	6,064	7,522	8,032	7,390	7,794	8,220	8,669	9,142
OPERATING INCOME AFTER DEPREC	10,292	12,230	6,207	8,845	9,664	8,639	15,999	17,932	14,638	12,531	15,736	16,625	17,564	18,556	19,602
Interest Expense	50	19	24	15	8	87	134	191	330	490	498	522	548	575	603
Non-Operating Income/Expense	277	539	725	965	-248	80	591	331	565	810	464	464	464	464	464
Special Items	-102	-140	160	-629	-1,722	-2,928	-411	-291		-240	-630	-630	-630	-630	-630
PRETAX INCOME	10,417	12,610	7,068	9,166	7,686	5,704	16,045	17,781	14,873	12,611	14,144	15,009	15,923	16,887	17,905
Income Taxes - Total	2,901	3,946	2,024	2,190	2,394	1,335	4,581	4,839	3,868	2,991	4,017	4,214	4,422	4,639	4,868
NET INCOME (Loss)	7,516	8,664	5,044	6,976	5,292	4,369	11,464	12,942	11,005	9,620	10,127	10,795	11,501	12,248	13,037

Based on 4.9 billion shares outstanding, this represents an earnings per share (EPS) increase from \$1.93 (2013) to \$2.62 (2018) or an increase of 35.5%. In other words, based on a stock price per a share of \$26, the 2013 full year EPS represents a Price-to-Earnings ratio of 13.5, while the future-year Price-to-Earnings ratio is 9.9. These values seem conservative given that analyst are projecting an EPS in the range of \$1.77 to \$2.46 in 2 years for Dec 2015<sup>35</sup>. Finally, an assumption can be made that as an Industry leader, Intel's sales and earnings will never be less than the Industry average, which is expected to grow at 3.4% and 2.3% respectively for the semiconductor industry. Using this assumption as a lower bound, a sales and earnings best and worst case forecast can be derived as shown in the chart below.

<sup>35</sup> [www.zacks.com/stock/quote/INTC/detailed-estimates](http://www.zacks.com/stock/quote/INTC/detailed-estimates)



### Balance Sheet

In order for Intel to generate these increased sales and resulting earnings, Intel will need the assets to support the forecasted sales. If Intel requires additional assets to support revenue growth, it will require additional resources to purchase the new assets. These funds can come from internal sources, from the sale of short-term investments, from taking loans or issuing debt, or from issuing stock. This section explores if Intel has adequate resources to source this growth internally. The two key variables that will be explored are Working Capital and Plant, Property & Equipment. The combination of these will need to scale as sales grow. The key question is whether or not Intel will generate enough cash to meet the required increase in Working Capital and to cover the cost of Plant, Property & Equipment.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Sales (Net)	34,209	38,826	35,382	38,334	37,586	35,127	43,623	53,999	53,341	52,708	
Net Operating Working Capital	16,742	13,483	11,095	13,844	10,186	12,388	19,842	12,764	16,278	16,753	
Plant, Property & Equipment (Gross)	39,833	44,132	47,084	46,052	48,088	47,822	50,481	58,073	66,046	73,416	Ave
Net Operating Working Capital	.489	.347	.314	.361	.271	.353	.455	.236	.305	.318	.345
Plant, Property & Equipment (Gross)	1.164	1.137	1.331	1.201	1.279	1.361	1.157	1.075	1.238	1.393	1.234
NET INCOME (Loss)	7,516	8,664	5,044	6,976	5,292	4,369	11,464	12,942	11,005	9,620	



Using the historical Working Capital and Plant, Property & Equipment to Sales 10-year averages, shown above, a forecast for Working Capital and Plant, Property & Equipment can be made. The forecasts are shown on the following table.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sales (Net)	34,209	38,826	35,382	38,334	37,586	35,127	43,623	53,999	53,341	52,708	55,301	58,022	60,877	63,873	67,015
Net Operating Working Capital	16,742	13,483	11,095	13,844	10,186	12,388	19,842	12,764	16,278	16,753	19,075	20,014	20,998	22,032	23,116
Plant, Property & Equipment (Gross)	39,833	44,132	47,084	46,052	48,088	47,822	50,481	58,073	66,046	73,416	68,229	71,586	75,108	78,804	82,681
NET INCOME (Loss)	7,516	8,664	5,044	6,976	5,292	4,369	11,464	12,942	11,005	9,620	10,127	10,795	11,501	12,248	13,037

In other words, Working Capital needs to increase by \$6.3B over the next 5 years to support the forecasted sales. Further, Plant, Property & Equipment needs to increase by \$9.3B. Together this amounts to \$15.6B that is required over the next 5 years to support forecasted sales. While this is a significant amount of money, during this time, Intel will generate over \$57B in net income. Even if Intel's current cash hoard of over \$22B did not exist, Intel could easily satisfy future asset funding demands internally.

### **Valuation**

In this section, Intel's value is estimated to determine if the firm is over, under or fairly valued compared to the current share price. A number of value estimation techniques are used since each method frames the valuation task differently and can highlight different issues regarding Intel's business practices. Further, each valuation technique requires differing levels of structure and assumptions. No one technique is perfect, but cumulatively they provide a good indication of a company's value. The techniques that will be used are valuation based on Price Multiples, Discounted Free Cash Flow, Discounted Abnormal Earnings, Discounted Abnormal Return on Equity and Earnings Growth.

## Price Multiples

Under this approach, several forecasts of performance are converted into a value by applying a price multiple derived from the industry average. This approach relies on the market to determine the prospects for a company and assumes the industry average is applicable to the firm being evaluated. This technique is also subject to non-company related market events such as a 'flash crash' meaning the estimated value could change significantly day-to-day. The primary advantage of this technique is its simplicity. The three multiples used for this valuation technique are Price-to-Sales, Price-to-Earnings and Price-to-Operating Cash Flow. Although any financial variable could have been chosen, these seem to be the most common. The corresponding data for Intel and two competitors is shown below along with averages for the multiples. It should be noted, the AMD data was not used in the averages due to its results looking like outliers, which highlights the downside of this technique in trying to find appropriate companies to be used for comparison.

as of 12/31/2013 (\$m)	<i>INTC</i>	<i>AMD</i>	<i>TXN</i>	
Share Price	\$25.96	\$3.87	\$43.91	
Shares Outstanding	4,970	754	1,098	
Sales	\$52,708	\$5,299	\$12,205	
Net Income	\$9,620	-\$83	\$2,162	
Operating Cash Flow	\$20,776	-\$148	\$3,384	<i>Average</i>
Price-to-Sales	2.45	0.55	3.95	3.20
Price-to-Earnings	13.41	-35.16	22.30	17.85
Price-to-Operating Cash Flow	6.21	-19.72	14.25	10.23

The multiples are then used along with the forecasted sales, net income and operating cash flow for 2023 to project the 2023 price. Each multiple results in a different forecasted price, so all are averaged to derive the overall forecast for this technique as shown below.

Forecasted Values (\$m)	2023	2023 Price
Sales	\$77,870	\$50.12
Net Income	\$15,042	\$54.04
Operating Cash Flow	\$26,860	\$55.28

\$53.14 *Average*

\$18.31 *Sum of dividends paid over 10 years*

\$71.45 *Total Value*

### **Discounted Free Cash Flow**

The purpose of the Discounted Free Cash Flow model is to estimate the money one would receive from an investment adjusted for the time value of money. The model uses future free cash flow projections and discounts them using the weighted average cost of capital to arrive at a present value. Thus, the first step is to evaluate the weighted average cost of capital for Intel. The total current debt carried by Intel is shown in the following table along with the interest rate on the debt. Based on Intel's 10-year average tax rate of 27.17%, Intel's tax-shield adjusted weighted average cost of capital is 2.10%.

Debt (\$Billions)	Bond Coupons	Weight
\$2,997	1.35%	10.7%
\$1,494	2.70%	10.6%
\$744	4.00%	7.8%
\$924	4.25%	10.4%
\$1,499	1.95%	7.7%
\$1,996	3.30%	17.4%
\$1,490	4.80%	18.9%
\$1,075	3.25%	9.2%
\$946	2.95%	7.4%
<b>Total</b>	<b>\$13,165</b>	<b>100.0%</b>
		2.88% WACC Pre-tax adjusted
		27.17% 10 year average Tax Rate
		2.10% WACC Tax Shield Adjusted

This model is based on a number of assumptions that come from a number of different sources to include forecasts. The assumptions used in the Discounted Free Cash Flow model to value Intel are as follows:

**Free Cash Flow For The Firm Valuation**

**Current Inputs (millions)**

	Assumptions	source
Enter the current revenues of the firm =	\$ 52,708	Intel as of 31 Dec 2013
Enter current capital invested in the firm =	\$ 71,421	Intel BV of Equity (\$58.256B) + BV of debt (\$13.165B) as of 31 Dec 2013
Enter the current depreciation =	\$ 8,032	Intel Depreciation, Depletion & Amortization as of 31 Dec 2013
Enter the current capital expenditures for the firm =	\$ 10,711	Intel as of 31 Dec 2013
Enter the change in Working Capital in last year =	\$ 56	Intel as of 31 Dec 2013 (Working Capital = Current Assets - Current Liabilities)
Enter beginning shareholder's equity	\$ 58,256	Intel as of 31 Dec 2013
Enter the value of current debt outstanding =	\$ 13,165	Intel as of 31 Dec 2013
Enter the number of shares outstanding =	4,970	Intel as of 31 Dec 2013

**High Growth Period**

	Assumptions	source
Enter the growth rate in revenues for the next 5 years =	4.92%	Based on group project Intel forecasts
What will all operating expenses be as a % of revenues in the fifth year?	73.28%	Based on group project Intel forecasts
How much debt do you plan to use in financing investments?	18%	Intel percentage as of 31 Dec 2013
Enter the growth rate in capital expenditures & depreciation	5.31%	Extrapolation based on last 10 years of Intel Capital Expenditure data
Enter working capital as a percent of revenues	35.13%	Intel as of 31 Dec 2013
Enter the tax rate that you have on corporate income	27.17%	Intel 10 year (2004-2013) average Tax Rate
What beta do you want to use to calculate cost of equity =	0.93	INTC beta as of 20 Apr 2014 (source: finance.yahoo.com)
Enter the current long term bond rate =	3.45%	US Treasury Bonds Rates (source: finance.yahoo.com/bonds as of 24 Apr 2014)
Enter the market risk premium you want to use =	4.96%	Implied Premium (source: <a href="http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/implpr.html">http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/implpr.html</a> as of 5 Jan 2011)
Enter your cost of borrowing money =	2.10%	Intel tax shield adjusted weighted average debt interest rate as of 31 Dec 2013

**Stable Period**

Enter the growth rate in revenues =	3.44%	Semiconductor Industry growth from 2004-2013
Enter operating expenses as a % of revenues in stable period =	76.08%	Based on Intel average from 2004-2009
Enter capital expenditures as a percent of depreciation in this period	105.75%	Based on Intel average from 2004-2009
How much debt do you plan to use in financing investments?	4.30%	Based on Intel average from 2004-2009
Enter interest rate of debt in stable period =	2.10%	Using same as high growth period due to creditworthiness of Intel
What beta do you want to use in the stable period =	0.74	Based on Semiconductor sector beta as of 24 Apr 2014 (source: <a href="http://www.macroaxis.com/invest/ratio/INTC--Beta">http://www.macroaxis.com/invest/ratio/INTC--Beta</a> )

The present value of the next 10 years of cash flows to include the terminal value in the 10th year is as follows:

**ESTIMATED CASHFLOWS**

	Base	1	2	3	4	5	6	7	8	9	10
<i>Growth in Revenue</i>		4.92%	4.92%	4.92%	4.92%	4.92%	4.62%	4.33%	4.03%	3.74%	3.44%
<i>Growth in Deprec'n</i>		5.31%	5.31%	5.31%	5.31%	5.31%	4.94%	4.56%	4.19%	3.81%	3.44%
Revenues	\$ 52,708	\$ 55,301	\$ 58,022	\$ 60,877	\$ 63,873	\$ 67,015	\$ 70,114	\$ 73,149	\$ 76,098	\$ 78,940	\$ 81,655
<i>Operating Expenses</i>											
% of Revenues	73.28%	73.28%	73.28%	73.28%	73.28%	73.28%	73.84%	74.40%	74.96%	75.52%	76.08%
- \$ Operating Expenses	\$ 38,626	\$ 40,526	\$ 42,520	\$ 44,612	\$ 46,807	\$ 49,110	\$ 51,774	\$ 54,424	\$ 57,045	\$ 59,618	\$ 62,125
EBIT	\$ 14,082	\$ 14,775	\$ 15,502	\$ 16,265	\$ 17,065	\$ 17,905	\$ 18,340	\$ 18,724	\$ 19,053	\$ 19,322	\$ 19,530
Tax Rate	27.17%	27.17%	27.17%	27.17%	27.17%	27.17%	27.17%	27.17%	27.17%	27.17%	27.17%
Ending equity	\$ 68,512	\$ 79,273	\$ 90,563	\$ 102,408	\$ 114,837	\$ 127,877	\$ 141,234	\$ 154,871	\$ 168,747	\$ 182,819	\$ 197,042
EBIT (1-t)	\$ 10,256	\$ 10,761	\$ 11,290	\$ 11,846	\$ 12,428	\$ 13,040	\$ 13,357	\$ 13,637	\$ 13,876	\$ 14,072	\$ 14,223
+ Depreciation	\$ 8,032	\$ 8,459	\$ 8,908	\$ 9,382	\$ 9,880	\$ 10,405	\$ 10,919	\$ 11,418	\$ 11,896	\$ 12,350	\$ 12,774
- Capital Expenditures	\$ 10,711	\$ 11,280	\$ 11,880	\$ 12,511	\$ 13,176	\$ 13,876	\$ 14,602	\$ 15,372	\$ 16,186	\$ 17,048	\$ 17,959
- Change in WC	\$ 56	\$ 911	\$ 956	\$ 1,003	\$ 1,052	\$ 1,104	\$ 1,089	\$ 1,066	\$ 1,036	\$ 999	\$ 954
= FCFF	\$ 7,521	\$ 7,028	\$ 7,363	\$ 7,714	\$ 8,081	\$ 8,465	\$ 8,385	\$ 10,259	\$ 11,080	\$ 11,841	\$ 12,535

*Terminal Value (in 2023):* \$ 376,824

Correspondingly, the cost of equity and capital along with the value of the firm by year is shown in the following tables.

**COSTS OF EQUITY AND CAPITAL**

	1	2	3	4	5	6	7	8	9	10
Cost of Equity	8.06%	8.06%	8.06%	8.06%	8.06%	7.87%	7.69%	7.50%	7.31%	7.12%
Proportion of Equity	81.57%	81.57%	81.57%	81.57%	81.57%	84.39%	87.22%	90.05%	92.87%	95.70%
After-tax Cost of Debt	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%
Proportion of Debt	18.43%	18.43%	18.43%	18.43%	18.43%	15.61%	12.78%	9.95%	7.13%	4.30%
Cost of Capital	6.86%	6.86%	6.86%	6.86%	6.86%	6.88%	6.90%	6.90%	6.90%	6.88%
Cumulative WACC	106.86%	114.19%	122.02%	130.39%	139.33%	148.92%	159.19%	170.18%	181.92%	194.44%
Cumulative Cost of Equity	108.06%	116.78%	126.19%	136.37%	147.36%	158.96%	171.18%	184.02%	197.47%	211.53%
Present Value	\$ 6,577	\$ 6,448	\$ 6,322	\$ 6,198	\$ 6,076	\$ 6,076	\$ 6,445	\$ 6,511	\$ 6,509	\$ 200,249

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Value of Firm by year	\$ 257,410	\$ 268,035	\$ 279,055	\$ 290,480	\$ 302,321	\$ 314,589	\$ 327,197	\$ 339,511	\$ 351,868	\$ 364,295
\$ Value of Debt	\$ 47,448.20	\$ 49,407	\$ 51,438	\$ 53,544	\$ 55,727	\$ 49,095	\$ 41,813	\$ 33,788	\$ 25,071	\$ 15,658

The resulting share price value of Intel including dividends is \$67.45 as detailed below:

**FIRM VALUATION**

Value of Firm	<b>\$ 257,410</b>
- Value of Debt	<b>\$ 13,165</b>
Value of Equity	<b>\$ 244,245</b>
Value of Equity per Share	<b>\$ 49.14</b>
Sum of dividends paid over 10 years	<b>\$18.31</b>
Total Value	<b>\$67.45</b>

***Discounted Abnormal Earnings***

Discounted Abnormal Earnings is a method for determining a company's worth based on book value and earnings. Abnormal earnings arise when a company is able to produce earnings that exceed a capital charge, which reflects the fact that there is a cost of capital and investors have an opportunity cost for the equity invested in a business. The assumptions used for this model are similar to the ones used in the Discounted Free Cash Flow. The resulting share price value of Intel including dividends is \$68.63 as detailed below:

		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Base	1	2	3	4	5	6	7	8	9	10
<b>Discounted Abnormal Earnings</b>											
EBIT (1-)	\$ 10,256	\$ 10,761	\$ 11,290	\$ 11,846	\$ 12,428	\$ 13,040	\$ 13,357	\$ 13,637	\$ 13,876	\$ 14,072	\$ 14,223
- WACC (CI)		\$ 5,759	\$ 6,059	\$ 6,376	\$ 6,709	\$ 7,060	\$ 7,255	\$ 7,387	\$ 7,459	\$ 7,476	\$ 7,442
Abnormal Earnings		\$ 5,002	\$ 5,231	\$ 5,470	\$ 5,719	\$ 5,980	\$ 6,102	\$ 6,250	\$ 6,417	\$ 6,597	\$ 6,782
Terminal AE											\$ 322,507
PV		\$ 4,681	\$ 4,581	\$ 4,483	\$ 4,386	\$ 4,292	\$ 4,097	\$ 3,926	\$ 3,771	\$ 3,626	\$ 169,355
<b>Cost of Equity</b>											
ROC		8.06%	8.06%	8.06%	8.06%	8.06%	7.87%	7.69%	7.50%	7.31%	7.12%
Capital Invested		15.07%	15.02%	14.98%	14.94%	14.89%	14.50%	14.19%	13.95%	13.76%	13.61%
		\$ 71,421	\$ 75,153	\$ 79,081	\$ 83,213	\$ 87,560	\$ 92,135	\$ 96,107	\$ 99,484	\$ 102,280	\$ 104,511
<b>Calculation of Capital Invested</b>											
Initial	\$ 71,421	\$ 71,421	\$ 75,153	\$ 79,081	\$ 83,213	\$ 87,560	\$ 92,135	\$ 96,107	\$ 99,484	\$ 102,280	\$ 104,511
+ Net Cap Ex		\$ 2,821	\$ 2,971	\$ 3,129	\$ 3,295	\$ 3,471	\$ 2,883	\$ 2,311	\$ 1,760	\$ 1,232	\$ 734
+ Chg in WC		\$ 911	\$ 956	\$ 1,003	\$ 1,052	\$ 1,104	\$ 1,089	\$ 1,066	\$ 1,036	\$ 999	\$ 954
Ending	\$ 71,421	\$ 75,153	\$ 79,081	\$ 83,213	\$ 87,560	\$ 92,135	\$ 96,107	\$ 99,484	\$ 102,280	\$ 104,511	\$ 106,199
<b>Cumulated Cost of Equity</b>		106.86%	114.19%	122.02%	130.39%	139.33%	148.92%	159.19%	170.18%	181.92%	194.44%

#### FIRM VALUATION

PV of AE	<b>\$207,198</b>
+ Capital Invested	<b>\$71,421</b>
+ PV of Chg Capital in Yr 10	<b>-\$28,507</b>
= Firm Value	<b>\$250,112</b>
Indicated Price per share	<b>\$50.32</b>
Sum of dividends paid over 10 years	<b>\$18.31</b>
Total Value	<b>\$68.63</b>

### Discounted Abnormal Return on Equity

Abnormal Return on Equity (ROE) is a company's ROE less the return required by equity investors. Companies with positive abnormal ROE are able to invest their net assets to create value for shareholders. If new equity is invested in positive valued projects, the company will increase its equity value-to-book multiple. The forecasted Discounted Abnormal Return on Equity for Intel is shown in the table below. The resulting share price value of Intel including dividends is \$48.99.

Discounted Abnormal ROE	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Terminal Year
	1	2	3	4	5	6	7	8	9	10	
Forecast ROE	17.38%	15.79%	14.53%	13.51%	12.67%	11.34%	10.55%	9.88%	9.29%	8.78%	
Cost of Equity	8.06%	7.55%	7.04%	6.53%	6.01%	5.50%	4.99%	4.48%	3.96%	3.45%	
Abnormal ROE	9.32%	8.24%	7.49%	6.98%	6.65%	5.84%	5.56%	5.40%	5.33%	5.33%	5.33%
Present Value of AROE	8.63%	7.12%	6.11%	5.42%	4.97%	4.24%	3.96%	3.81%	3.75%	3.79%	109.96%
Total DAROE	261.75%										
Beginning Equity	\$ 58,256										
Firm Value	\$ 152,484										
Indicated value per share	\$ 30.68										
Sum of dividends paid over 10 years	\$18.31										
Total Value	\$48.99										

### Earnings Growth (Buffet's Model)

Warren Buffett is considered a value investor and seeks businesses whose products or services will be in constant and growing demand. Specifically, Buffett seeks out consumer

monopolies selling products in which there is no effective competitor, either due to a patent or brand name or similar intangible that makes the product unique. Consumer monopolies typically have high profit margins because of their unique position. Intel fits this description with one of the best known brands in the world allowing it to command a premium for products resulting in operating margins and net profit margins above industry norms. The resulting share price value of Intel including dividends, under the Sustainable Growth Rate model, is \$102.27.

Buffett Valuation Worksheet (January/February 1998, Computerized Investing, www.aaii.com)

Date of Analysis: 4/24/2014 for 31 Dec 2013

Current Stock Data		source	Seven Year Averages	
Company:	Intel		Return on Equity:	18.5%
Ticker:	INTC		Payout Ratio:	45.1%
Price:	\$25.96	bigcharts.marketwatch.com	P/E Ratio-High:	18.0
EPS:	\$1.94	WRDS	P/E Ratio-Low:	11.3
DPS:	\$0.90	WRDS	P/E Ratio:	14.7
BVPS:	\$11.72	WRDS	Sustainable Growth	10.2%
	P/E:	13.4	(ROE * (1 - Payout Ratio))	
	Earnings Yield:	7.5%		
	Dividend Yield:	3.5%		
	P/BV:	2.2		

Gv't Bond Yield: 3.5% US Treasury Bonds Rates (source: finance.yahoo.com/bonds as of 24 Apr 2014)

Historical Company Data										
		Price			P/E Ratio		Payout			
Year		EPS*	DPS*	BVPS*	High**	Low**	High	Low	ROE	Ratio
2006	Year 8	0.87	0.40	6.34	26.55	16.80	30.5	19.3	13.7%	46.0%
2007	Year 7	1.20	0.45	7.35	28.00	18.80	23.3	15.7	16.3%	37.5%
2008	Year 6	0.93	0.55	6.90	25.20	12.05	27.1	13.0	13.5%	58.9%
2009	Year 5	0.79	0.56	7.50	21.20	12.05	26.8	15.3	10.5%	70.9%
2010	Year 4	2.06	0.63	8.90	24.25	17.60	11.8	8.5	23.2%	30.6%
2011	Year 3	2.46	0.78	8.73	25.85	19.15	10.5	7.8	28.2%	31.8%
2012	Year 2	2.20	0.87	10.25	29.20	19.25	13.3	8.8	21.5%	39.5%
2013	Year 1	1.94	0.90	11.72	26.00	20.10	13.4	10.4	16.6%	46.4%

Source: \* Wharton Research Data Services  
\*\* bigcharts.marketwatch.com

	EPS	DPS	BVPS	High Price	Low Price	
Annually Compounded Rates of Growth (7 year)						$[(\text{Year 1} / \text{Year 8})^{(1/7)}] - 1$
	12.1%	12.3%	9.2%	-0.3%	2.6%	
Annually Compounded Rates of Growth (3 year)						$[(\text{Year 1} / \text{Year 4})^{(1/3)}] - 1$
	-2.0%	12.6%	9.6%	2.3%	4.5%	

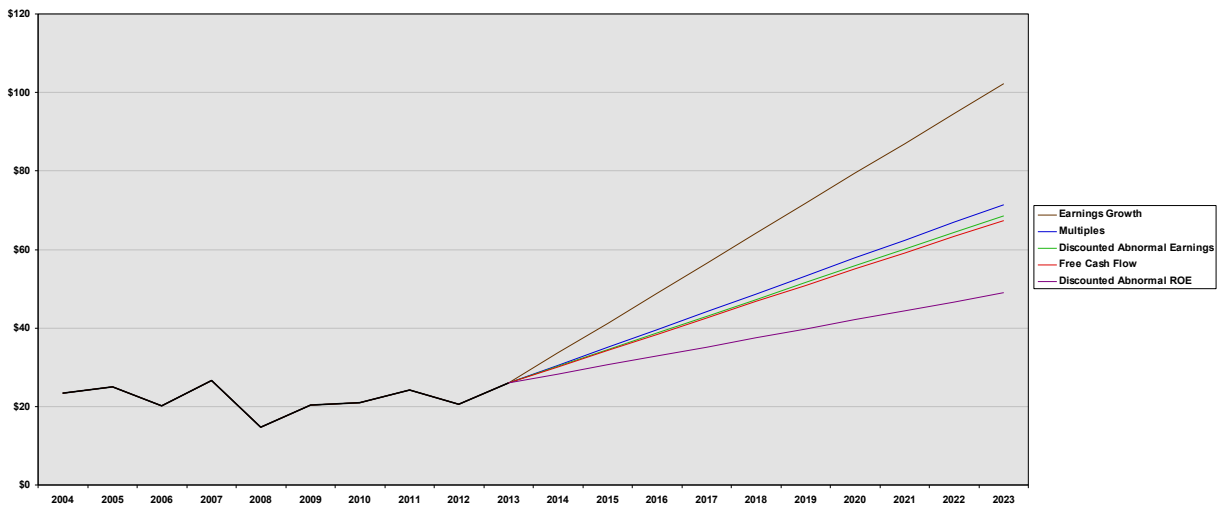
Projected Company Data Using Historical Earnings Growth Rate			
Year	EPS	DPS	
2013	Current	\$1.94	0.87
2014	Year 1	2.18	0.98
2015	Year 2	2.44	1.10
2016	Year 3	2.74	1.23
2017	Year 4	3.07	1.38
2018	Year 5	3.44	1.55
2019	Year 6	3.86	1.74
2020	Year 7	4.33	1.95
2021	Year 8	4.85	2.19
2022	Year 9	5.44	2.45
2023	Year 10	6.10	2.75

6.10 Earnings after 10 years  
18.20 Sum of dividends paid over 10 years  
\$89.56 Projected price (Average P/E \* EPS)  
\$107.76 Total gain (Projected Price + Dividends)  
15.3% Projected return using historical EPS growth rate  
 $[(\text{Total Gain} / \text{Current Price})^{(1/10)}] - 1$

Projected Company Data Using Sustainable Growth Rate				
Year		BVPS	EPS	DPS
2013	Current	\$11.72	2.17	0.98
2014	Year 1	12.91	2.39	1.08
2015	Year 2	14.23	2.64	1.19
2016	Year 3	15.67	2.90	1.31
2017	Year 4	17.27	3.20	1.44
2018	Year 5	19.03	3.52	1.59
2019	Year 6	20.96	3.88	1.75
2020	Year 7	23.09	4.28	1.93
2021	Year 8	25.44	4.71	2.12
2022	Year 9	28.03	5.19	2.34
2023	Year 10	30.88	5.72	2.58

5.72 Earnings after 10 years (BVPS \* ROE)  
 18.31 Sum of dividends paid over 10 years  
 \$83.97 Projected price (Average P/E \* EPS)  
**\$102.27** Total gain (Projected Price + Dividends)  
 14.7% Projected return using sustainable growth rate  
 $[(\text{Total Gain} / \text{Current Price})^{1/10}] - 1$

The following chart compares all of the valuation models in their projection of Intel's future price. These models suggest Intel's value, including dividends, will grow by 6.56% to 14.70% a year.



### Assessment Of Solvency

While the previous section focused on firm valuation for equity investors, another important perspective is from the view of a potential holder of company debt. Credit analysis is the evaluation of a firm's ability to repay debt and associated interest payments and specifically a forecast on whether a firm will face financial distress. Credit analysis of Intel is the focus of this section.



### ***Calculation of Altman Z-Score Model***

The size of the world debt market is \$82.2 trillion (2009)<sup>36</sup>. Because of this size and level of involvement from countries to hedge funds to individual investors, a number of stress prediction models have been developed. They are focused on predicting whether a firm will face distress such as bankruptcy. One of the more robust, multifactor models is known as the Altman Z-score model. This model weights five important factors to derive a bankruptcy score. The formula is as follows:

$$\text{Altman Z-score} = 1.2 (X_1) + 1.4 (X_2) + 3.3 (X_3) + 0.6 (X_4) + 1.0 (X_5)$$

where:

$X_1$  = net working capital / total assets (liquidity)

$X_2$  = retained earnings / total assets (cumulative profitability)

$X_3$  = EBIT / total assets (return on assets)

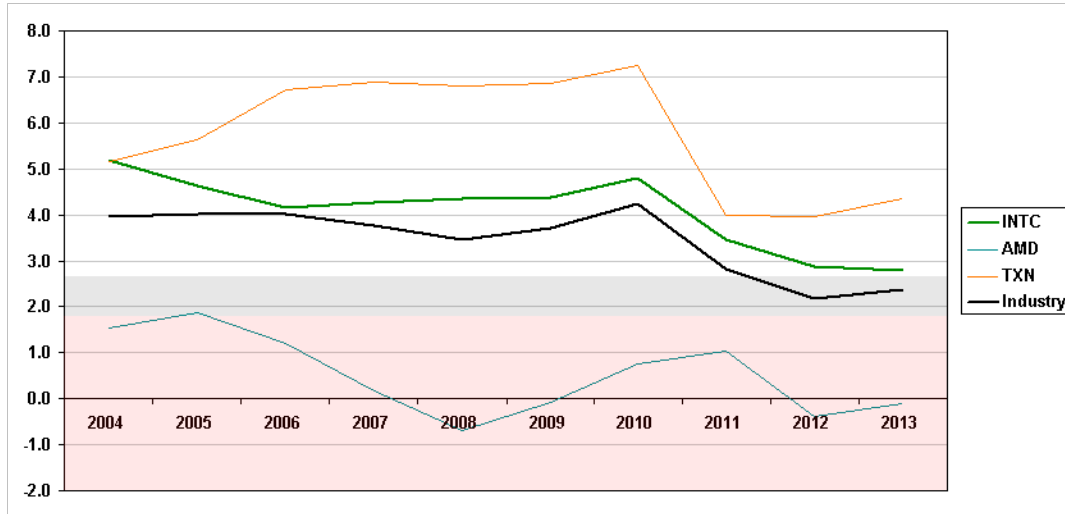
$X_4$  = market value of equity / book value of total liabilities (leverage)

$X_5$  = sales / total assets (sales generating potential of assets)

The model predicts bankruptcy when  $Z < 1.81$  while the range between 1.81 and 2.67 is a cautionary area. Below is Altman Z-score data for Intel and two of its competitors (AMD and TXN) over the last 10 years. As can be seen, Intel is above both the bankruptcy cutoff and the cautionary area. Of note however, is the decrease since 2010 which corresponds to Intel taking on debt to finance acquisitions; but this downward trend appears to have hit the entire industry.

---

<sup>36</sup> [en.wikipedia.org/wiki/Bond\\_market](http://en.wikipedia.org/wiki/Bond_market)



### Estimate of Debt Rating

Debt Ratings influence the yield that must be offered to sell the debt. Thus, debt ratings can influence the ability of a company to issue debt to purchase revenue generating assets. Further, a high yield rate on the debt will limit the earnings available to shareholders. One of the major debt ratings firms is Standard & Poor's. They rank debt from AAA (the best) to D (default). The ratings are highly correlated with the ability of the firm to make payments on the debt and the forecasted ability to payback the debt. Because of this, debt ratings are highly correlated to earnings and cash flow as well as the amount of financial leverage. As seen in the Financial Ratio section, earnings, cash flow and financial leverage can be tracked using various ratios. Some of the ratios with strong correlations to debt ratings are shown in the table below.

Debt Ratings: Median Financial Ratios by Category				
Median ratios for overall category in January 2012 (excludes financial terms)				
S&P debt rating	Earnings before interest and taxes to net capital	Pretax interest coverage	Cash flow from operations to total debt	Net debt to net capital
AAA	43.1%	103.2	291%	-29%
AA	28.80%	15.1	43%	28%
A	24.20%	13.1	53%	20%
BBB	17.10%	6	32%	30%
BB	16.20%	3.2	29%	39%
B	8.80%	1.8	12%	60%
CCC	-2.1	-0.2	>0.2%	88%

Intel's values for Earnings before interest and taxes to net capital, Pretax interest coverage, Cash flow from operations to total debt, and Net debt to net capital are shown in the following table. Each measure falls into a different rating bin from the category table above. However, based on this data, on average, Intel's debt rating should be about AA (S&P).

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Intel
Earnings before interest and taxes to net capital	26.7%	33.8%	16.9%	20.7%	24.7%	20.7%	32.4%	39.1%	28.6%	21.5%	between A & BBB
Pretax interest coverage	208.3	663.7	294.5	611.1	960.8	65.6	119.7	93.1	45.1	25.7	between AAA & AA
Cash flow from operations to total debt	1866.1%	703.8%	574.7%	637.6%	579.3%	545.1%	803.7%	295.9%	143.8%	157.8%	between AAA & AA
Net debt to net capital	1.8%	5.8%	5.0%	4.6%	4.8%	4.9%	4.2%	15.4%	25.7%	22.6%	between AA & A

### Actual Bond Rating

The following graphic<sup>37</sup> identifies the Intel bonds currently available for trade. The rating column indicates S&P currently rates the credit worthiness of Intel debt at A+.

Description	Coupon	Maturity Date	Rating		Bid		Ask	
			Moody's	S&P	Yield	Price Qty(min)	Price Qty(min)	Yield
INTEL CORP NOTE 01.95000% 10/01/2016	1.950	10/01/2016	A1	A+	0.779	102.800 90(2)	102.969 129(10)	0.710
INTEL CORP NOTE 03.30000% 10/01/2021	3.300	10/01/2021	A1	A+	2.900	102.652 250(10)	102.940 28(2)	2.857
INTEL CORP SR NT 4.80000% 10/01/2041	4.800	10/01/2041	A1	A+	4.413	106.110 24(2)	106.244 28(10)	4.405
INTEL CORP SR NT 1.35000% 12/15/2017	1.350	12/15/2017	A1	A+	1.403	99.813 105(10)	99.944 500(10)	1.366
INTEL CORP SR NT 2.70000% 12/15/2022	2.700	12/15/2022	A1	A+	3.194	96.300 250(10)	96.740 250(5)	3.134
INTEL CORP SR NT 4.00000% 12/15/2032	4.000	12/15/2032	A1	A+	4.097	98.743 90(10)	99.023 250(5)	4.075

According to S&P, "A" means a strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances<sup>38</sup>. This is consistent with the insights from the industry analysis conducted in the Strategic Analysis section; specifically that the semiconductor industry is cyclical.

<sup>37</sup> [fixedincome.fidelity.com](http://fixedincome.fidelity.com)

<sup>38</sup> [www.standardandpoors.com](http://www.standardandpoors.com)

## Conclusion

The semiconductor industry has been growing for over 40 years with industry annual revenues of over \$200 billion<sup>39</sup>. The semiconductor industry is characterized by rapid technological innovation and no one does innovation like Intel. Intel is the world's fifth most valuable brand worth \$35 billion and its microprocessors drive almost 90% of the world's personal computers. This leadership position gives Intel more latitude to invest in research and development, which translates into increased efficiency of design and manufacturing. Despite this strength, Intel is susceptible to the general health of the economy which dictates demand for semiconductor components. However, Intel has taken steps to diversify by making acquisitions in the areas of security solutions, wireless options and cloud computing.

Intel has consistently reported strong financial numbers. A review of Intel's financial statements suggest the firm has considerable accounting flexibility that could potentially be used to distort their reported numbers. Specifically, Intel makes extensive use of subjective judgments on the valuation of non-marketable equity investments as well as judgments on the timing of revenue recognition. These could be a mechanism to smooth earnings. However, Intel is very forthcoming about the extensive use of subjective estimates in their financial reporting. Further, their accounting practices are in alignment with other firms in the industry. Overall, the accounting strategy used by Intel seems to accurately represent the company's financial activity and health.

Financial metrics paint a very positive picture of Intel's performance and health. Specifically, on profitability metrics such as Return on Equity, Return on Assets, Gross Profit

---

<sup>39</sup> [www.pwc.com/gx/en/technology/publications/semiconductor-industry-analysis-and-projections.jhtml](http://www.pwc.com/gx/en/technology/publications/semiconductor-industry-analysis-and-projections.jhtml)

Margin and Profit Margin, Intel performs well above industry averages which reflects its brand value allowing it to command a premium for its products. Regarding liquidity, Intel is also strong. The Current Ratio, Quick Ratio and Operating Cash Flow Ratio all suggest Intel has a healthy ability to cover liabilities. Likewise, Intel is well positioned to make payments and pay down its debt. The only area of caution with regard to financial metrics concerns Asset Turnover. For this metric, Intel is below Industry averages. While this seems at odds with the rest of the financial metrics, as noted in the Strategy section, Intel dominates the semiconductor industry through a strategy of differentiation where the company spends over \$5 billion a year on research and development. Additionally, Intel is a semiconductor manufacturing powerhouse. The combination of these suggest that it is expensive to be and stay at the top.

The financial metrics suggest Intel has had strong growth over the last 10 years. Based on forecasts, Intel looks poised to continue this growth. Due to its dominance in the areas where it operates, acquisitions are really Intel's only means for significant revenue growth. Based on an assumption of continued growth through acquisitions, a conservative assessment is that Intel's growth over the next 5 years will follow a trend similar to the last 10 years of annual growth or 5% per annum. In a similar manner, earnings will continue an advancing trend as well. Based on 4.9 billion shares outstanding, earnings per share is forecasted to increase from \$1.93 (2013) to \$2.62 (2018) or an increase of 35.5%. Finally, in order for Intel to generate these increased sales and resulting earnings, Intel will need the assets to support the forecasted sales and subsequent earnings. To meet these forecasts, Intel needs Working Capital to increase by \$6.3B over the next 5 years. Further, Plant, Property & Equipment needs

to increase by \$9.3B. Together this amounts to \$15.6B that is required over the next 5 years. While this is a significant amount of money, during this time, Intel will generate over \$57B in net income. Even if Intel's current cash hoard of over \$22B did not exist, Intel could easily satisfy future asset funding demands internally.

Increases in forecasted sales and earnings would indicate Intel is a value relative to its current share price. A number of value estimation techniques need to be used since each method frames the valuation task differently and can highlight different issues regarding Intel's business practices. Further, each valuation technique requires differing levels of structure and assumptions. No one technique is perfect, but cumulatively they provide a good indication of a company's value. These models suggest Intel's value, including dividends, will grow by 6.56% to 14.70% a year over the next 10 years.

Another important perspective is from the view of a potential holder of company debt. Credit analysis is the evaluation of a firm's ability to repay debt and associated interest payments and specifically a forecast on whether a firm will face financial distress. Credit analysis of Intel suggests it is healthy and has ample ability to pay liabilities from cash on hand as well as from on-going operations. Further, S&P currently rates the credit worthiness of Intel debt at A+ suggesting Intel has "a strong capacity to meet financial commitments, but [is] somewhat susceptible to adverse economic conditions and changes in circumstances."

In closing, the analysis suggests Intel is a leader in the semiconductor industry and is making the right strategic decisions to ensure they maintain that position. Further, an examination of the financial statements does not indicate any improprieties. Due to these insights, along with strong forecasted financial performance, Intel is a **BUY**.