



## Adjustments to Convert Reported Total Assets to Adjusted Book Value (Invested Capital)

This backtest data set contains the adjustments we make to convert reported total assets to [Invested Capital](#). This data set contains point-in-time data. See below.

This data is available through our [API](#) in the [Total Assets to Invested Capital Reconciliation endpoint](#). Historical data provided through the API is best-available data as of today, not the point-in-time data presented in this backtest data set.

### Backtest Dataset General Information

See our [detailed documentation](#) explaining the fields in a backtest dataset file.

### Economic Rationale for Invested Capital - Why Invested Capital Matters

Invested Capital is the sum of all cash that has been invested in a company over its life with no regard to financing form or accounting name. It's the total investment in the business from which operating profit is derived. Average Invested Capital is the denominator in the return on invested capital calculation ([ROIC](#)), which is considered the most robust measure of profitability by fundamental researchers. We did not invent Invested Capital. While the Invested Capital concept has been part of fundamental research for centuries, it has failed to enter more mainstream areas of equity research because of the difficulty in calculating it consistently and accurately across large numbers of companies. Our [Robo-Analyst technology](#) allows us to scale the most sophisticated calculation of Invested Capital across thousands of companies. More [details](#).

### Reported Total Assets to Invested Capital Adjustment Calculation

In general, we make 16 types of adjustment to convert reported total assets to Invested Capital:

#### Reported Total Assets

- Excess Cash
- NIBCL (Non-Interest-Bearing Current Liabilities)
- + Total Reserves
- Total Reported Operating Lease Assets
- + Off-Balance-Sheet Operating Leases
- Unconsolidated Subsidiary Assets (non-operating)
- Total Discontinued Operations Assets
- + Accumulated Goodwill Amortization
- + Accumulated Asset Write-Downs After-Tax
- + Accumulated Unrecorded Goodwill
- Total Reported Deferred Tax Assets
- Hidden Deferred Tax Assets Less Current Deferred Tax Liabilities
- Total Reported Deferred Compensation Assets
- Hidden Deferred Compensation Assets Less Current Deferred Compensation Liabilities
- Over Funded Pensions



- Accumulated OCI (Other Comprehensive Income), Including Quarterly Estimates
- = **Invested Capital**

Excess Cash is cash that is not required for the operations of the business. For most companies, we estimate the amount of required cash to be 5% of sales. Excess Cash is the cash above the required amount. More [details](#).

NIBCL (Non-Interest-Bearing Current Liabilities) are current liabilities that are deducted from current assets to arrive at net working capital. An example of a NIBCL is accounts payable. For financial companies, debt is deducted from current assets to arrive at net investment assets. More [details](#).

Total Reserves are contra asset accounts that reduce asset values for probable future losses (in the case of inventory reserves or loan-loss provisions) or resolve the difference in accounting treatments (in the case of LIFO reserves). Since probable losses are calculated at management's discretion, companies can use reserve accounts to manipulate earnings and the carrying values of the assets to which the reserves apply. More [details](#).

Total Reported Operating Lease Assets are operating leases where the associated asset and liability are recorded on the balance sheet at the present value of future lease payments, post adoption of FASB's ASU 2016-02. We remove the company's operating lease estimate and replace it with our own. More [details](#).

Off-Balance-Sheet Operating Leases are not recognized on the balance sheet, unlike capital leases or debt-financed purchases. We add the discounted present value of all required operating lease payments to Invested Capital. This adjustment ensures that each company is held responsible for earning returns on all the capital invested in the business, not just the assets on the balance sheet. More [details](#).

Unconsolidated Subsidiary Assets (non-operating) are companies in which the parent company has significant control, usually owning between 20%-50% of the business and where poor disclosure forces us to treat unconsolidated subsidiary assets as non-operating and remove them from invested capital. More [details](#).

Total Discontinued Operations Assets are assets that are held for sale by a company. We remove these Total Discontinued Operations Assets from invested capital for a more accurate picture of how much operating capital a business has on hand to generate NOPAT. More [details](#).

Accumulated Goodwill Amortization is the gross amount of goodwill amortization that has been expensed over a company's lifetime. This adjustment ensures that each company is held responsible for earning returns on all the capital invested in the business, not just the goodwill and other assets on the balance sheet. More [details](#).

Accumulated Asset Write-Downs After-Tax are reductions in the book value of an asset that occur when the fair value of an asset has declined significantly below its carrying value. The value of the asset is reduced on the balance sheet, and the write-down is charged against income. We add back asset write-downs (after tax) to our measure of invested capital. Examples of Asset Write Downs are goodwill impairments and losses on sale. More [details](#).

Accumulated Unrecorded Goodwill is the premium paid for the company over its book value (as opposed to its market value) as part of a "pooling of interests method" acquisition, where only the book

value of the acquired firm is recorded on the balance sheet. This acquisition method ended in 2002. We added Accumulated Unrecorded Goodwill to Invested Capital to ensure that all capital invested in the business is accounted for. More [details](#).

Total Reported Deferred Tax Assets are the result of differences between GAAP accrual accounting and tax policy. Net Deferred Tax Assets (DTAs) artificially raise reported assets and do not help generate operating profit while Net Deferred Tax Liabilities (DTLs) are like a source of interest-free financing. We remove the impact of DTAs and DTLs from our calculation of invested capital. An example of a Reported Net Deferred Tax Asset is a tax loss carry-forward. More [details](#).

Hidden Deferred Tax Assets Less Current Deferred Tax Liabilities are net deferred tax assets (current deferred tax assets - current deferred tax liabilities + fixed deferred tax assets) that are not presented directly on the balance sheet and can only be found in the Management Discussion & Analysis (MD&A) or footnotes to the financial statements. We treat these hidden net tax assets the same way we treat the reported net tax assets. More [details](#).

Total Reported Deferred Compensation Assets are employee compensation delayed until a later date. The assets held for these plans are used to compensate employees in the future, not to generate profits for the company. As such, they should not be factored into the calculation of a company's return on invested capital. More [details](#).

Hidden Net Deferred Compensation Assets (Net of Current) are net deferred compensation assets (current deferred compensation assets - current deferred compensation liabilities + fixed deferred compensation assets) that are not presented directly on the balance sheet and can only be found in the Management Discussion & Analysis (MD&A) or footnotes to the financial statements. We treat these hidden net compensation assets the same way we treat the reported net compensation assets. More [details](#).

Over Funded Pensions are the net overfunded status of a company's pension and post-retirement plans is included on the balance sheet. When a company's pension plans are overfunded, the excess assets are not being actively used to create revenue. Overfunded pension assets are similar to excess cash, and should not be included in the calculation of return on invested capital. More [details](#).

Accumulated OCI (Other Comprehensive Income), Including Quarterly Estimates are gains and losses that have yet to be recognized, and are excluded from net income. We remove OCI from our Invested Capital calculation to (1) better represent the actual capital on hand for management to generate a return on and (2) avoid the noise from the fluctuations of OCI. An example of OCI is unrealized gains/losses on for-sale securities. More [details](#).

**Data Value Data Fields** - The following data fields are columns in the data set. All values are reported in ones units.

Datapoints that are impacted by stock price changes are marked with an asterisk (\*) in the table below.

***Reported Total Assets to Invested Capital Adjustments***

Name	Datapoint	Example (AAN 2016)
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Reported Total Assets (Total Assets (unadjusted))	ASSETS_UNADJUSTED	\$2,615,736,000
Excess Cash	EXCESS_CASH	\$168,694,200
Non-Interest Bearing Current Liabilities (NIBCLs)	NIBCL	\$360,193,000
Total Reserves	RESERVES_TOTAL	\$6,624,000
Total Reported Operating Lease Assets	TOTAL_REPORTED_OPERATING_LEASE_ASSETS	\$0
Off-Balance-Sheet Operating Leases	LEASES_OPERATING_OBLIGATION_NET_PRESENT_VALUE	\$426,041,792
Unconsolidated Subsidiary Assets (non-operating)	ASSETS_FIXED_UNCONSOLIDATED	\$0
Total Discontinued Operations Assets	ASSETS_DISCONTINUED_OPERATIONS	\$8,866,000
Accumulated Goodwill Amortization	GOODWILL_AMORTIZATION_ADJUSTED_ACCUMULATED	\$2,607,000
Accumulated Asset Write- Downs After-Tax	WRITE_DOWNS_AFTER_TAX_TOTAL_ACCUMULATED	\$249,179,860
Accumulated Unrecorded Goodwill	GOODWILL_UNRECORDED_ACCUMULATED	\$0
Total Reported Deferred Tax Assets	TOTAL_REPORTED_DEFERRED_TAX_ASSETS	\$5,912,000
Hidden Deferred Tax Assets	TOTAL_HIDDEN_DEFERRED_TAX_ASSETS_NET	\$0
Total Reported Deferred Compensation Assets	TOTAL_REPORTED_DEFERRED_COMPENSATION_ASSETS	\$0
Hidden Deferred Compensation Assets	TOTAL_HIDDEN_DEFERRED_COMPENSATION_ASSETS_NET	\$3,600,000
Over Funded Pensions	PENSION_FUNDED_STATUS_LIMITED	\$0
Accumulated OCI (Other Comprehensive Income), Including Quarterly Estimates	OCI_ADJUSTED	-\$531,000
Invested Capital	CAPITAL_INVESTED	\$2,753,454,452



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Accounting data is only the beginning of fundamental research. It must be translated into economic earnings to truly understand profitability and valuation. This translation requires deep analysis of footnotes and the MD&A, a process that our [robo-analyst technology](#) empowers us to perform for thousands of stocks, ETFs and mutual funds.



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