

Return on Capital (ROC) or Return on Invested Capital (ROIC) Calculation

We believe that Return on Capital (ROC)--sometimes called Return on Invested Capital (or ROIC) is an important metric for investors in evaluating any company's performance. That's why we use it when performing our final review to ensure ourselves that company qualify under the second principle, being a high-quality and well-managed company. We highly recommend you use this metric as well.

Let's dig further into what ROC consists of, and then we'll demonstrate how to calculate it manually if you find yourself in the position that you cannot find the calculated figure otherwise.

ROC relates after-tax operating profits with the capital that is placed into service. It is therefore a performance metric that incorporates both the Income Statement and the Balance Sheet. ROC measures how successfully capital is deployed within a company.

Note that ROC is not a measure of financial performance under generally accepted accounting principles (or GAAP) in the United States. ROC has limitations as an analytical tool, and when assessing a company's operating performance, you should not consider ROC in isolation or as a substitute for other financial data prepared in accordance with GAAP. Different companies, software, websites and other data sources may calculate ROC differently than we do, limiting its usefulness as a comparative measure unless applying the method used consistently.

Therefore, we want to stress it's important to be consistent with the data sources you're using when comparing companies, so that you know the calculation is the same for each company you are researching.

In this lecture, we want to show you how to calculate the return on capital that we're using in our course as well as in all of our personal investment research. It is the one that we believe is the most meaningful. But of course, that's for you to decide as to whether you agree that it makes sense to you or not. As we stated before, there is not a generally accepted definition that will be consistent everywhere, for return on capital. So you need to come up with what you are most comfortable with.

As a side note, most of the time, the calculations found from various data sources shouldn't be different enough to materially change the perceived quality or viability of the company.

Let's take a look at where this information can be found:

For an example, we will take a look at a Mexican company with the symbol GRUMA

By looking at Gurufocus.com

If we go to the “15-Y Financials” tab you will see a section called “Ratios” and the fourth line down gives you the “Return on Invested Capital.” If you move over to the most current year (this one being Dec14) you see that the amount is “17.54”. This means that the Return on Invested Capital (ROIC) is **17.54%**.

Ratios	Annuals														
Fiscal Period	Dec00	Dec01	Dec02	Dec03	Dec04	Dec05	Dec06	Dec07	Dec08	Dec09	Dec10	Dec11	Dec12	Dec13	Dec14
Return on Equity %	2.57	3.45	4.28	5.03	9.20	11.06	11.78	14.98	-115.68	22.92	5.92	51.86	9.02	26.06	29.03
Return on Assets %	1.08	1.46	1.85	2.16	3.96	4.70	5.24	6.97	-31.50	3.46	1.04	12.57	2.37	6.87	10.30
Return on Capital - Joel ...	8.04	9.08	11.29	10.05	12.50	9.95	10.41	18.89	-46.03	18.29	11.17	31.93	9.10	15.72	23.82
Return on Invested Cap...	4.96	3.85	4.95	4.27	6.34	6.30	6.57	6.26	16.37	10.73	3.30	10.05	5.79	15.18	17.54
Weighted Average Cost...	--	--	--	--	--	--	--	5.85	7.90	12.25	10.25	9.97	5.47	6.29	6.83
Debt to Equity	0.79	0.73	0.72	0.64	0.60	0.62	0.46	0.50	2.51	2.92	2.71	0.98	1.76	1.26	0.65

Now with that, we don’t have to do any calculations, Gurufocus did all the work. But what if you don’t have access to Gurufocus in your country? Then you will need to calculate it manually, and that’s the purpose of this lecture. We will now go through the manual calculation.

The way Gurufocus computes Return on Invested Capital is as follows:

Net Operating Revenue After Taxes (NOPAT) divided by the Average Invested Capital

There are six items we need to find in order to make this calculation manually:

- 1) Net Operating Income
- 2) Effective Tax Rate
- 3) Long-Term Debt
- 4) Short-term Debt
- 5) Total Equity
- 6) Cash Balance

We first need to calculate the Net Operating Profit After Taxes (NOPAT)

If we take a look at the Income Statement for GRUMA (again using Gurufocus.com) we can see the Net Operating Income for the year ended 12/14 was 6,023 Million Pesos. We also see that the Tax Rate % for that same period was 21.55. If we subtract $6,023 \times 21.55\%$ (1,298) from 6,023 we get 4,725. This calculated amount equals the Net Operating Profit After Tax (NOPAT). Again, this amount is **4,725**.

Income Statement	Annuals (MXN MXN)													View: MXN % /share % YOY		
Fiscal Period	Dec00	Dec01	Dec02	Dec03	Dec04	Dec05	Dec06	Dec07	Dec08	Dec09	Dec10	Dec11	Dec12	Dec13	Dec14	TTM
Revenue	18,246	17,699	19,177	22,935	25,814	27,884	30,630	35,818	44,793	50,489	46,232	57,645	54,409	49,036	49,935	49,935
Cost of Goods Sold	10,978	11,160	11,994	14,603	16,562	18,211	19,959	24,193	30,237	33,100	31,563	40,118	37,849	32,266	31,575	31,575
Gross Profit	7,267	6,539	7,184	8,331	9,252	9,673	10,671	11,624	14,556	17,389	14,669	17,527	16,560	16,770	18,361	18,361
Gross Margin %	39.83	36.95	37.46	36.33	35.84	34.69	34.84	32.45	32.50	34.44	31.73	30.40	30.44	34.20	36.77	36.77
Selling, General, & Ad...	5,793	5,621	5,691	6,586	7,258	8,059	8,923	9,750	11,289	13,582	12,151	14,021	13,725	11,991	12,094	12,094
Advertising	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Research & Developm...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other Operating Expe...	655	9	0	5	-10	-21	-33	0	-0	-0	468	167	21	140	244	244
Operating Income	819	910	1,493	1,740	2,004	1,634	1,781	1,874	3,267	3,807	2,050	3,338	2,814	4,640	6,023	6,023
Operating Margin %	4.49	5.14	7.78	7.59	7.76	5.86	5.81	5.23	7.29	7.54	4.43	5.79	5.17	9.46	12.06	12.06
Interest Income	145	91	58	64	236	56	78	64	90	95	34	126	48	37	36	36
Interest Expense	-790	-628	-567	-529	-503	-597	-573	-684	-824	-1,450	-1,424	-1,017	-901	-1,105	-1,190	-1,190
Net Interest Income	-646	-537	-509	-465	-267	-541	-495	-619	-733	-1,354	-1,390	-891	-852	-1,068	-1,154	-1,154
Other Income (Expense)	260	373	167	-168	-98	114	148	2,050	-13,917	766	819	5,175	29	80	49	49
Other Income (Minor...	-183	-182	-196	-183	-178	-154	-79	-145	-521	-581	-208	-545	-588	-147	-169	-169
Pre-Tax Income	434	746	1,151	1,107	1,638	1,207	1,434	3,304	-11,384	3,219	1,479	7,622	1,990	3,652	4,918	4,918
Tax Provision	-19	-255	-561	-673	-788	-387	-411	-926	-435	-1,108	-840	-1,807	-863	-195	-1,060	-1,060
Tax Rate %	4.44	34.15	48.77	60.76	48.13	32.04	28.67	28.02	-3.82	34.43	56.76	23.70	43.35	5.35	21.55	21.55
Net Income (Continuin...	231	309	393	491	954	1,296	1,524	2,233	-11,818	2,110	639	5,816	1,128	3,457	3,858	3,858
Net Income (Discontin...	--	--	--	--	--	--	--	--	--	--	--	--	576	-147	599	599
Net Income	231	309	393	491	954	1,240	1,524	2,233	-12,340	1,529	432	5,271	1,115	3,163	4,287	4,287

We now need to calculate the Average Invested Capital

To do this, we will need to take a look at the balance Sheet for GRUMA (once again using Gurufocus.com), we can see the following:

Long-Term Debt as of 12/13 was 13,096, and as of 12/14, it was 9,324

Short-Term Debt as of 12/13 was 3,276, and as of 12/14, it was 1,437

Total Equity as of 12/13 was 12,973, and as of 12/14, it was 16,564

Cash and Cash equivalents as of 12/13 was 1,339, and as of 12/14, it was 1,465

	12/13													12/14	
Accounts Payable	1,166	809	1,129	966	1,428	2,071	2,309	2,696	3,172	3,631	3,674	5,544	6,308	3,547	3,556
Total Tax Payable	--	--	--	--	--	--	--	--	125	220	80	624	328	1,526	624
Other Accrued Expe...	--	1,310	1,412	1,788	1,637	1,611	2,013	2,416	2,960	2,884	3,224	0	0	-0	-0
Accounts Payable & A...	1,166	2,119	2,541	2,755	3,064	3,682	4,323	5,112	6,257	6,734	6,977	6,168	6,635	5,073	4,179
Current Portion of Lon...	1,282	337	791	499	513	538	882	941	2,419	2,203	2,193	1,633	8,019	3,276	1,437
Current Deferred Re...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Current Deferred Ta...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DeferredTaxAndReve...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other Current Liabilities	1,301	36	17	19	25	32	47	22	6,317	12	5	3,179	2,871	3,001	3,189
Total Current Liabilities	3,749	2,492	3,349	3,273	3,602	4,251	5,252	6,075	14,993	8,950	9,175	10,981	17,525	11,350	8,806
Long-Term Debt	5,851	6,203	6,054	5,972	5,919	6,685	5,601	6,913	11,728	20,286	16,497	11,472	11,853	13,096	9,324
Capital Lease Obliga...	--	--	--	--	--	--	--	--	--	246	277	--	--	--	--
Debt to Equity	0.79	0.73	0.72	0.64	0.60	0.62	0.46	0.50	2.51	2.92	2.71	0.98	1.76	1.26	0.65
PensionAndRetiremen...	--	--	--	--	--	--	--	--	299	273	248	--	--	--	--
NonCurrent Deferred ...	376	309	625	1,036	1,471	1,560	1,712	2,006	2,556	2,476	2,612	3,838	4,225	2,046	2,345
Minority Interest	2,439	2,356	2,585	2,858	2,870	2,991	2,920	2,882	3,642	4,110	3,724	4,282	3,032	1,454	1,521
Other Long-Term Liabi...	472	191	84	161	272	755	614	340	5,578	171	141	538	1,524	1,689	2,078
Total Liabilities	12,887	11,551	12,697	13,300	14,134	16,243	16,099	18,216	38,795	36,265	32,398	31,111	38,159	29,636	24,073
Common Stock	9,407	9,704	10,300	10,888	12,027	4,579	4,876	4,853	6,972	6,972	6,972	6,972	5,668	5,364	5,364
Preferred Stock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Retained Earnings	6,622	7,076	7,886	8,504	9,361	11,150	12,174	14,409	-3,477	729	-76	6,603	5,361	7,742	11,372
Accumulated other co...	-9,860	-10,823	-11,875	-12,559	-14,387	-7,818	-7,598	-8,397	--	--	--	--	--	--	--
Additional Paid-In Capital	2,824	2,965	3,139	3,215	3,669	3,833	4,662	4,832	2,144	--	--	--	--	--	--
Treasury Stock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Equity	8,993	8,922	9,450	10,048	10,670	11,745	14,115	15,696	5,639	7,701	6,896	13,431	11,302	12,973	16,564
Total Equity to Total Asset	0.41	0.44	0.43	0.43	0.43	0.42	0.47	0.46	0.13	0.18	0.18	0.30	0.23	0.30	0.41

Balance Sheet	Annuals (MXN MXN)													View: MXN % /share % YOY	
Fiscal Period	Dec00	Dec01	Dec02	Dec03	Dec04	Dec05	Dec06	Dec07	Dec08	Dec09	Dec10	Dec11	Dec12	Dec13	Dec14
Cash And Cash Equi...	116	382	188	149	184	243	375	383	1,426	1,881	21	1,180	1,287	810	1,250
Marketable Securities	--	--	263	220	297	98	195	97	--	127	80	140	45	529	215
Cash, Cash Equivalen...	116	382	451	369	481	342	570	481	1,426	2,008	101	1,320	1,333	1,339	1,465

Using the figures from above we can calculate the Invested Capital as of 12/13 as follows:

Long-Term Debt + Short-Term Debt + Total Equity – Cash & Cash Equivalents, or

$$13,096 + 3,276 + 12,973 - 1,339 = 28,006$$

We can calculate the Invested Capital as of 12/14 as follows:

Long-Term Debt + Short-Term Debt + Total Equity – Cash & Cash Equivalents, or

$$9,324 + 1,437 + 16,564 - 1,465 = 25,860$$

We next need to average these last two annual amounts for Invested Capital to get an Average Invested Capital. We do this as follows:

Invested Capital as of 12/13 + Invested Capital as of 12/14 / 2 = Average Invested Capital

$$28,006 + 25,860 / 2 = 26,933$$

Calculating the Return on Invested Capital (ROIC)

The only calculation we need to make to solve for the Return on Invested Capital (ROIC) is to divide the Net Operating Profit After Taxes (NOPAT) figure from above by the Average Invested Capital figure also from above. This calculation is shown below:

Net Operating Profit After Taxes (NOPAT) / Average Invested Capital = ROIC

$$4,724 / 26,933 = 17.54\%$$

Here's how Gurufocus shows the calculation on their website. It might make things a little more clear for you:

Gruma SAB de CV's annualized Return on Invested Capital (ROC) for the fiscal year that ended in Dec. 2014 is calculated as:

$$\begin{aligned} & \text{Return on Invested Capital} \quad (\text{A: Dec. 2014}) \\ &= \text{NOPAT} \quad / \quad \text{Average Invested Capital} \\ &= \text{Oper. Inc.} * (1 - \text{Tax Rate}) \quad / \quad ((\text{Invested Capital (A: Dec. 2013)} + \text{Invested Capital (A: Dec. 2014)}) / 2) \\ &= 6022.914 * (1 - 21.55\%) \quad / \quad ((28006.849 + 25859.718) / 2) \\ &= 4724.976033 \quad / \quad 26933.2835 \\ &= 17.54\% \end{aligned}$$

where

$$\begin{aligned} & \text{Invested Capital} \quad (\text{A: Dec. 2013}) \\ &= \text{Book Value of Debt} \quad + \quad \text{Book Value of Equity} - \text{Cash} \\ &= \text{Long-Term Debt} \quad + \quad \text{Short-Term Debt} \quad + \quad \text{Total Equity} \quad - \quad \text{Cash} \\ &= 13096.443 \quad + \quad 3275.897 \quad + \quad 12973.064 \quad - \quad 1338.555 \\ &= 28006.849 \end{aligned}$$

$$\begin{aligned} & \text{Invested Capital} \quad (\text{A: Dec. 2014}) \\ &= \text{Book Value of Debt} \quad + \quad \text{Book Value of Equity} - \text{Cash} \\ &= \text{Long-Term Debt} \quad + \quad \text{Short-Term Debt} \quad + \quad \text{Total Equity} \quad - \quad \text{Cash} \\ &= 9324.052 \quad + \quad 1437.108 \quad + \quad 16563.646 \quad - \quad 1465.088 \\ &= 25859.718 \end{aligned}$$