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### Economic Profit and TRI's EP-Var<sup>®</sup>

### Critical Equation #8 for Business Leaders

## EP = NOPAT - K<sub>0</sub>(Total Capital)

#### **Introduction**

In our Critical Equation #8 for Business Leaders, we introduce a measure of value creation for shareholders that has existed for centuries, at least in concept. This measure is often referred to as Economic Profit (EP). In the past few decades, numerous value-based management consultants have introduced a variety of offspring to Economic Profit, the most common being Economic Value Added <sup>™</sup> (EVA <sup>™</sup>).

In his 1890 *Principles of Economics* (Macmillan Press), the esteemed economist Alfred Marshall promoted the fact that to create value for owners a return on investment should exceed the cost of capital. Expressions that evolved included abnormal earnings, excess earnings, excess income, excess realizable profit, and super-profits. What is common to all, and has never wavered over centuries of commerce, is creating sustainable differentiation, which is at the heart of so much strategy today. As far back as the 1920s, General Motors employed an early version of EP. The most operational of all expressions, residual income, was a term coined by GE in the 1950s. It is well known that many companies have implemented EP in various fashions, some successfully and some not. Many have linked their EP systems to Activity-Based Costing (ABC).

The academic and practitioner worlds have both shown that, while certainly not perfect, EP is reasonably correlated with share price performance, typically a higher correlation than other well-known financial metrics such as ROE, EPS, sales, cash flow, and dividend growth.

A recent advance to EVA <sup>™</sup> is EVA Momentum, which is calculated by taking the change in EVA during a time period as a percentage of prior sales. The interesting aspect, from our perspective, is the scaling to sales as well as being related to a growth in EVA. Due to the fact that EVA is a registered trademark, we will use only the terminology EP for the duration. TRI's EP-Var<sup>®</sup> takes EP into a planning, meeting commitments, and growth variance analysis space as found in most companies' Financial Planning & Analysis (FP&A). A graphical example of TRI's EP-Var<sup>®</sup> that will be developed later in this article is shown in Exhibit 1.



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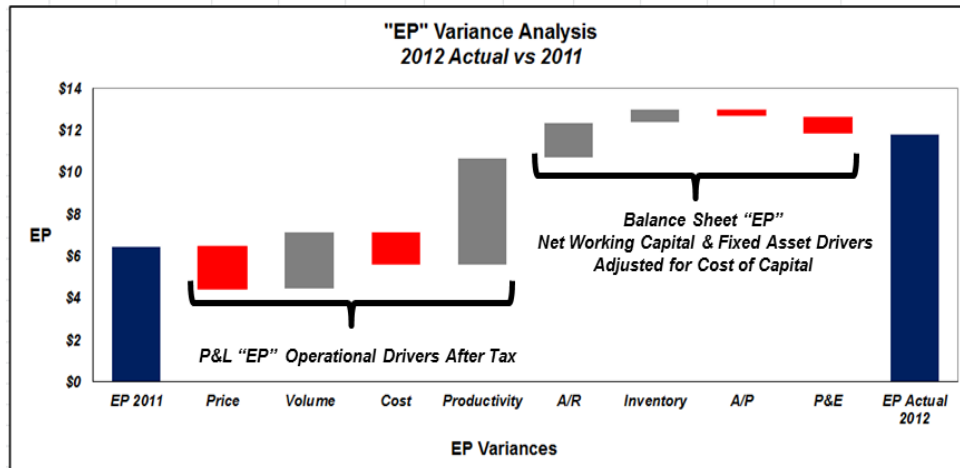
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Exhibit 1 - TRI's EP-Var<sup>®</sup>



Our goals are to examine the basics of EP and its derivation, elaborates on potential applications for your business, and make sure you are aware of its pros and cons in practice. This article introduces our business equation #8, the financial statement linkage to EP, levers of EP, Market Value Added, Variance Analysis for EP and TRI Corp's EP-Var<sup>®</sup> and a culture and processes that can drive success from EP.

### **Critical Equation #8 Economic Profit**

Our equation # 8, Economic Profit, is represented by

$$EP = NOPAT - KO (\text{Total Capital}).$$

Value is created for shareholders when  $EP > 0$  and is destroyed when  $EP < 0$ . To appreciate these results, we need to return to the fundamental principle of creating shareholder value, that is, to identify and implement opportunities where the rate of return exceeds the cost of capital. This was presented in our Critical Equation #4 on the Cost of Capital and can be written as

### **Rate of Return > Cost of Capital**

The rate of return on investment can be presented by  $NOPAT/\text{Total Capital}$ . Some specific terminology used across different industries that comes reasonably close to the Rate of Return is Return on Total Capital (ROTC), Return on Capital Employed (ROCE), Return on Invested Capital (ROIC), Return on Net Assets (RONA), and Return on Capital (ROC). **NOPAT** is the Net Operating Profit After Tax (i.e., the net income if your business had no debt or was referred to as unlevered). **Total Capital**,



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as shown below, is Net Working Capital plus Fixed Assets in an operational framework or the capital supplied by debt and equity from a financial perspective. Substituting,

$$\text{NOPAT/Total Capital} > K_o$$

Rearranging (and assuming total capital is > 0) results in

$$\text{NOPAT} > K_o (\text{Total Capital})$$

And with further rearrangement can be shown to be

$$\text{NOPAT} - K_o (\text{Total Capital}) > 0$$

The left hand expression is EP. EP is derived from the basic logic that value is created when the rate of return exceeds the cost of capital. To demonstrate the calculation, assume NOPAT is \$50, cost of capital is 10%, and total capital is \$200. Substituting,

$$\text{EP} = \text{NOPAT} - K_o (\text{Total Capital})$$

$$\text{EP} = \$50 - .10(\$200) = \$50 - \$20 = \$30.$$

The EP is a positive \$30. The NOPAT/Total Capital is 25%. The excess return is 15% (i.e., 25% minus 10% cost of capital). The excess return, 15% times a total capital of \$200, equals the \$30 EP. The business has earned a return greater than the cost of capital and, in a perfect world, shareholder value (market capitalization) would increase by the \$30.

### ***Financial Statement Linkage to EP***

Exhibit 2 shows the linkage of financial statements to EP. The financials reflect numerous non-financial service industries (and can be extended to financial services). Regardless of standard GAAP (external



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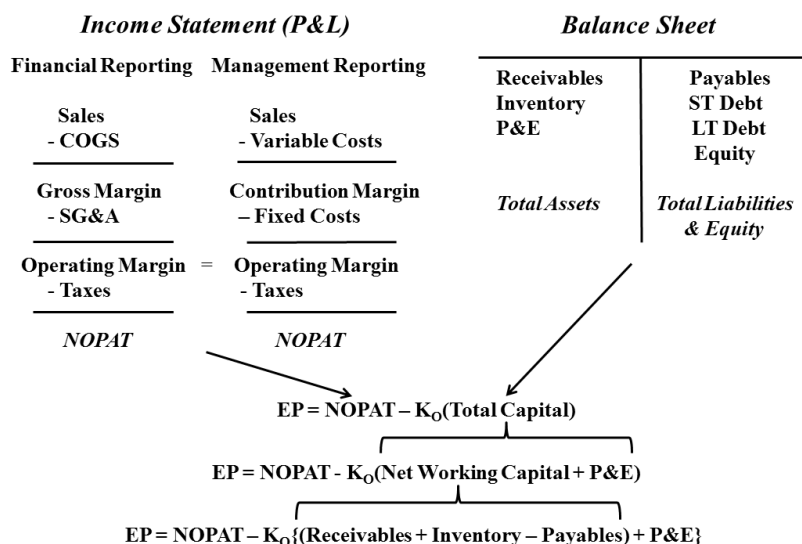
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financial reporting) or management reporting (internal), the sales, operating margins (aka, EBIT, earnings before interest and taxes), and NOPATs are identical. The breakdown of costs is from different perspectives.

Exhibit 2

### Financial Statement Linkage to EP



The total capital can be broken down into Net Working Capital and P&E. Net Working Capital is the sum of receivables and inventory with a subtraction for payables as a current liability.

Another item that could be dominant is advances (a liability until earned). Think of Net Working Capital as the operational perspective to total capital. Note that the sum of Net Working Capital and P&E also is equal to the sum of short- and long-term debt (assumed interest bearing) and equity. There is significant discussion around the use of book or market values in total capital. Use of book value, when total enterprise value exceeds the book value, can result in an underestimated capital charge that would overestimate EP. NOPAT, by very definition, would be much more aligned naturally to current market values.

On a technical note, any interest on the short- and/or long-term debt is not subtracted in the calculation of the taxes and NOPAT. Think of NOPAT as essentially the net income if the business had no interest bearing debt, that is, all-equity or unlevered. The impact of the interest on an after-tax basis, as we demonstrated in our Critical Equation #4, is embedded in the overall cost of capital or K<sub>0</sub>.



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As business leaders, what can we do to improve EP?

$$\begin{array}{ccccccc} & \uparrow & & & & & \\ \text{To} & & & & & & \\ & & \uparrow & \downarrow & \downarrow & \downarrow & \uparrow & \updownarrow \\ & & & & & & & \end{array} \quad EP = NOPAT - K_o [(A/R + \text{Inventory} - A/P) + P\&E]$$

Assuming no negative interaction among the inputs for EP, anything that can increase NOPAT is EP + decreases in the net working capital (e.g., cash calls, improved CCC, reducing DSO or ACP, make to order vs. build to forecast, outsourcing, reduced scrap and E&O, defect reduction, lean six sigma, reduced cycle time, and increased DTP). The up and down arrow on P&E reflects reduction in improved capacity utilization, outsourcing, consolidation, and disposal of negative NPV P&E; increased investment in capital expenditures justified for growth; improvements in quality, customer satisfaction, use of customer economics, partnering with suppliers; and maximizing the integration of soft skills and hard skills. Relating to a strategy that is well communicated and has widespread support also is necessary. Enterprise Risk Management (ERM) also should influence decision making around the drivers of EP. An example of ERM linkage is that while most systems strive for reduced inventory levels, long-lead time items, potential for strikes, and supply shocks can create havoc with a lean system that does not allow for proper backup. Later we discuss the importance of being able to find where you impact EP.

We can reformulate EP as

$$EP = NOPAT - K_o [(ST \& LT Debt) + Equity]$$

In this version, the total capital is the sum of interest-bearing debt and equity that is from a balance sheet equivalent to the sum of Net Working Capital and P&E. In our opinion, this version is significantly harder to communicate to employees and for employees to visualize how they impact EP.

As shown in Exhibit 2, many users of EP systems, as advocated by the consultancy businesses, do make modifications to their accounting statements to avoid some well-known distortions. For example, leased assets are all treated as owned; R&D, restructuring, and advertising are capitalized; and cash and marketable securities are considered EP neutral because they should return exactly their cost of capital.



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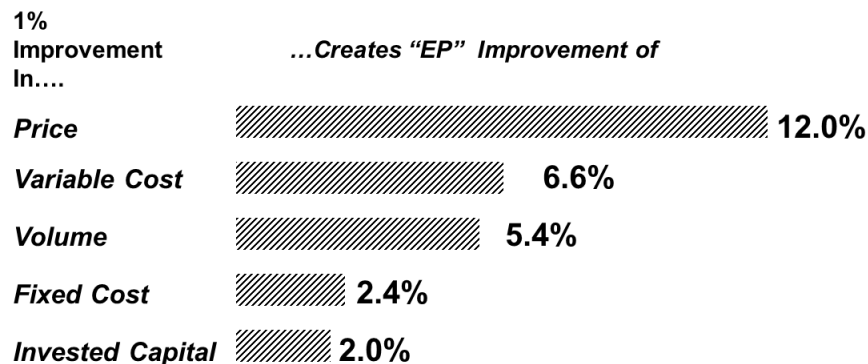
### Levers of EP

Numerous authors and consultants naturally talk about ways to improve EP. From Exhibit 2 the scenarios are reasonably apparent: increase sales, reduce costs, improve net working capital (decrease A/R and inventory, increase A/P, in combination strive for negative net working capital, reduce P&E). Changes to the cost of capital can be found in our Critical Equation #4. All make common sense in running any business, and we don't really need EP concepts to tell us that.

In our opinion, every business leader needs to know the fundamental drivers of profitability and what is controllable and not controllable. Exhibit 3 shows the leverage impact on EP as a result of 1% changes (ceteris paribus) in price, volume, variable cost, fixed cost, and invested or total capital. Total capital can further be broken into net working capital and P&E. While the example is hypothetical, the results are what we see in practice. Most improvement in profitability will come from the P&L and not the balance sheet. Given time, strong profitability also is the biggest driver on cash flow. Price power is the single biggest driver to improving EP. As Warren Buffett told the Financial Crisis Inquiry Commission, *"The single most important decision in evaluating a business is pricing power .... If you've got the power to raise prices without losing business to a competitor, you've got a very good business. And if you have to have a prayer session before raising the price by 10 percent, then you've got a terrible business."*

Exhibit 3

## Economic Profit Levers\*



### What Can we Control?

\* Base Case: Price...\$100, Volume...1,000, Variable Cost per Unit...\$55, Fixed Cost...\$20,000, Tax Rate...40%, Cost of Capital...10%, Invested Capital...100,000, Cost of Capital Leverage...2%, all changes ceteris paribus.



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### **Market Value Added**

Another important measure related to EP is Market Value Added or MVA. MVA is the present value of all future EPs. MVA is mathematically identical to Net Present Value (NPV). In a capital market context, it has not been unusual for buy- and sell-side analysts to calculate MVA as a ranking of success in creating shareholder value. In this context, MVA is the difference between Market Capitalization and book value. To demonstrate the equivalence of NPV and MVA, consider the example in Exhibit 4.

#### **Exhibit 4**

### **The Equivalence of NPV and MVA**

#### **Assume the following:**

- Cost of Capital is 10%
- Cash flows are

<u>Today</u>	<u>End of year 1 to infinity</u>
-\$1,000	\$120 per year forever

#### **Questions**

- What is the NPV?
- What is the EP in all future years?
- What is the MVA?
- What are the implications?

The NPV is  $-\$1,000 + \$120/.10 = \$200$ . With an investment of \$1,000 and a cost of capital of 10%, the capital charge per year forever is \$100. The EP in all future years is \$20 (\$120 minus \$100 capital charge). The present value of an infinite EP stream of \$20 is \$200 ( $\$20/.10$ ). The NPV and the MVA are equivalent. In a perfect world, NPV and MVA would be reflected in the market capitalization of the company.

Our next example is for an appropriation request with an initial investment of \$150 and finite cash flows of five years. The details are in Exhibit 5. Sales are as given. Costs are assumed to be 50% of sales (both variable and fixed). Depreciation is calculated with \$0 residual and straight-line over five years. The tax rate is 40%. Working capital as a % of sales change is 10% (i.e., the 10% is applied to the change in sales). This is equivalent to working capital turns of 10X or approximately every 36 days. The cost of capital is 10%. The NPV method is a standard operating cash flow model. A test of the accuracy of the model is that the sum of NOPATs equals the sum of cash flows. This value is \$120. Note that the key to balancing the summation of NOPAT and operating cash flow is the residual. The residual is often overlooked in practice and will create an error in the NPV. In this example, this is a fundamental concept in FP&A modeling.



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Exhibit 5

<i>NPV Method</i>	Today (Yr 0)	EOY 1	EOY 2	EOY 3	EOY 4	EOY 5
Sales		\$ 100.00	\$ 130.00	\$ 150.00	\$ 160.00	\$ 160.00
- Costs		50.00	65.00	75.00	80.00	80.00
- Dep		30.00	30.00	30.00	30.00	30.00
<hr/>						
Net Op Profit		20.00	35.00	45.00	50.00	50.00
- Tax		8.00	14.00	18.00	20.00	20.00
<hr/>						
NOPAT		12.00	21.00	27.00	30.00	30.00
- Investment	150.00					
+ Dep		30.00	30.00	30.00	30.00	30.00
- Δ Work Cap		10.00	3.00	2.00	1.00	0.00
+ Residual						16.00
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= Op Cash Flow	\$ (150.00)	\$ 32.00	\$ 48.00	\$ 55.00	\$ 59.00	\$ 76.00
<hr/>						
NPV	\$ 47.57					
<hr/>						
<i>MVA Method</i>	Today (Yr 0)	EOY 1	EOY 2	EOY 3	EOY 4	EOY 5
Investment (BOY)	\$ 150.00	\$ 150.00	\$ 130.00	\$ 103.00	\$ 75.00	\$ 46.00
- Dep		30.00	30.00	30.00	30.00	30.00
+ Δ Work Cap		10.00	3.00	2.00	1.00	0.00
<hr/>						
Investment (EOY)		130.00	103.00	75.00	46.00	16.00
NOPAT		12.00	21.00	27.00	30.00	30.00
Capital Charge		15.00	13.00	10.30	7.50	4.60
<hr/>						
EP		\$ (3.00)	\$ 8.00	\$ 16.70	\$ 22.50	\$ 25.40
<hr/>						
MVA	\$ 47.57					

The classic NPV is \$47.57. The MVA method is to calculate the investment in book terms in each year. This is the prior year value minus any depreciation plus change in working capital. Note, in the NPV method, the working capital is a subtraction due to its being a use of cash with the positive values. In the MVA method, the working capital change becomes part of the investment level. The capital charges are on the total investment level. The EPs are the NOPATs minus the capital charge in each year. The MVA is the present value of the EPs at 10%. The MVA is \$47.57, identical to the classic NPV. Again, anyone who has performed a standard NPV in engineering economics has most likely already used EP and MVA.



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The MVA is the present value of all the estimated EPs. Again, NPV and MVA are one and the same. Anyone who has ever done a standard NPV calculation in engineering economics, finance, or accounting has calculated MVA and just did not know it. Through this logic EP also can be viewed as linked to creating shareholder value. Note, these are pro forma EPs, not historical.

An interesting aspect of the MVA method in appropriation requests is that we can trace the path of value creation from the EPs and see the timing of when things create economic value. For companies that link EP to payoff of specific projects, MVA shows when benefits of extra compensation can be expected.

The total value of any business often is referred to as its Enterprise Value. This is the sum of equity at market and debt. In an MVA world, the total value of any business is the sum of MVA and total capital employed.

EP and MVA can be useful for long-cycle businesses and can be useful tools to increase the Probability of a Win (PWIN) in a bid. In relationship to solution and/or consultative selling, we suggest that your business will be able to increase its probability of a win by demonstrating a true win-win. What this means in TRI's Customer Economics™ is demonstrating to a customer his or her EP or MVA when dealing with you. Your finance organization can be a powerful driver for these types of systems.

### **Variance Analysis and EP: TRI Corp's EP-Var®**

In our Critical Equation #2, we reviewed the concepts of variance analysis in the context of planning, meeting commitments, and growth, that is, a "3-Up Variance Walk." In this section, we extend variance analysis in the context of a 3-Up to an application of EP. The goal is to decompose EP into fundamental drivers of value creation such as price, volume, cost, productivity, and changes in the drivers of total capital variances (such as net working capital and fixed assets where net working capital and fixed assets equal total capital). We call this analysis EP-Var®. Consider the following year-over-year Economic Profit, where costs are assumed to be to both variable and fixed (or COGS and SG&A in a financial format) in a business:

Yr0	Yr1	Variance
Sales <sub>Yr0</sub>	Sales <sub>Yr1</sub>	(Sales <sub>Yr1</sub> - Sales <sub>Yr0</sub> )
- Costs <sub>Yr0</sub>	- Costs <sub>Yr1</sub>	(Costs <sub>Yr1</sub> - Costs <sub>Yr0</sub> )
OM <sub>Yr0</sub>	OM <sub>Yr1</sub>	(OM <sub>Yr1</sub> - OM <sub>Yr0</sub> )
- Tax <sub>Yr0</sub>	- Tax <sub>Yr1</sub>	
NOPAT <sub>Yr0</sub>	NOPAT <sub>Yr1</sub>	(NOPAT <sub>Yr1</sub> - NOPAT <sub>Yr0</sub> )
- K <sub>O</sub> (TC) <sub>Yr0</sub>	- K <sub>O</sub> (TC) <sub>Yr1</sub>	{K <sub>O</sub> (TC) <sub>Yr1</sub> - K <sub>O</sub> (TC) <sub>Yr0</sub> }
EP <sub>Yr0</sub>	- EP <sub>Yr1</sub>	(EP <sub>Yr1</sub> - EP <sub>Yr0</sub> )

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where TC is the total capital.

Every functional leader understands that his or her primary responsibility is to contribute to growth in EP over time, shown by  $(EP_{Yr1} - EP_{Yr0})$ . Given the significant correlation to share price performance and the fact that bonus plans often are driven by EP, all leaders need to understand the primary drivers of the EP variance. At the level above, it is impossible to ascertain how price, volume, mix, inflation, cost, productivity (variable and fixed), foreign exchange, net working capital and fixed assets, or whatever the unique drivers of the business are, have impacted positively or negatively the change in EP. Herein lays the value of variance decomposition. EP variance can be rewritten as

$$EP \text{ Variance} = (EP_{Yr1} - EP_{Yr0}) =$$

$$\begin{aligned} & \{ [Sales_{Yr1} - Sales_{Yr1}/(1+Price)] + \{ [Sales_{Yr1}/(1+Price)] - Sales_{Yr0} \} - \{ [Sales_{Yr1}/(1+Price)] * (Costs_{Yr0}/Sales_{Yr0}) - Costs_{Yr0} \} \\ & - [Costs_{Yr1} - Costs_{Yr1}/(1+Cost)] + \{ [Sales_{Yr1}/(1+Price)] * (Costs_{Yr0}/Sales_{Yr0}) - Costs_{Yr1}/(1+Cost) \} * (1-T) \} - [K_o * (TC_{Yr1} - TC_{Yr0})]. \end{aligned}$$

where  $Sales_{Yr1}$ ,  $Sales_{Yr0}$ ,  $Costs_{Yr1}$ ,  $Costs_{Yr0}$  are Sales and Costs respectively in Yr1 and Yr0; **Price** is the inflation or deflation associated with the products' selling price; and **Cost** is the inflation or deflation associated with costs (e.g., like suppliers raising price or labor rates going down). **T** is the corporate tax rate, **K<sub>o</sub>** is the overall or weighted average cost of capital, and, for tractability, and both are assumed to be constants to allow the analysis to be driven by operational drivers. Of course, EP can be impacted by actions that increase and/or reduce the cost of capital. Thus the equation is the EP variance decomposed into some basic components. These components, with the equation, and assuming the **TC** (Total Capital) is broken into Net Working Capital (**A/R**, **Inv** (Inventory), and **A/P**) and Fixed Assets (**P&E**), can be written as

$$EP \text{ Variance} = (EP_{Yr1} - EP_{Yr0}) =$$

$$\begin{aligned} & \underbrace{\{ [Sales_{Yr1} - Sales_{Yr1}/(1+Price)] \}}_{\text{Price Variance}} + \underbrace{\{ [Sales_{Yr1}/(1+Price)] - Sales_{Yr0} \}}_{\text{Sales Volume Variance}} - \underbrace{\{ [Sales_{Yr1}/(1+Price)] * (Costs_{Yr0}/Sales_{Yr0}) - Costs_{Yr0} \}}_{\text{Cost Volume Variance}} \\ & \qquad \qquad \qquad \underbrace{\hspace{10em}}_{\text{Net Volume Variance}} \\ & - \underbrace{[Costs_{Yr1} - Costs_{Yr1}/(1+Cost)]}_{\text{Cost Variance}} + \underbrace{\{ [Sales_{Yr1}/(1+Price)] * (Costs_{Yr0}/Sales_{Yr0}) - Costs_{Yr1}/(1+Cost) \} * (1-T)}_{\text{Productivity Variance}} \\ & - \{ K_o * \underbrace{[ (A/R_{Yr1} - A/R_{Yr0}) + (Inv_{Yr1} - Inv_{Yr0}) - (A/P_{Yr1} - A/P_{Yr0}) ]}_{\text{Net Working Capital Variance}} + \underbrace{[P\&E_{Yr1} - P\&E_{Yr0}]}_{\text{Fixed Asset Variance}} \} \\ & \qquad \qquad \qquad \underbrace{\hspace{10em}}_{\text{Capital Charge Variance}} \end{aligned}$$



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The EP Variance ( $EP_{Yr1} - EP_{Yr0}$ ) can be decomposed into price, volume, cost, productivity, and capital charges with respect to net working capital and fixed assets.

Often used in FP&A, the “3-Up Variance Walk” can be a powerful tool to help business leaders improve their decision-making. As stated above, the “3-Up” involves planning, meeting commitments, and growth variances. All three are inter-related. Prior period to plan, plan to actual, and prior period to actual are, respectively, planning, meeting commitments, and growth variances. As we discussed in our Critical Equation #2, one also can divide productivity into variable and fixed costs, mix can be taken out of productivity, volume can be decomposed in share and true growth, and foreign exchange can be added as a variance for global businesses.

To demonstrate the “3-Up Variance Walk” method on EP, consider the financial statements in Exhibit 6. The costs are a combination of variable and fixed in a management accounting format (or COGS, SG&A, R&D in financial format). The tax rate is 40% and is constant across all scenarios. We assume A/R turns of 3, 4, and 5.73; inventory turns of 5, 8.5, and 7.35; A/P days of 45, 47, and 32; and P&E as % of sales of 75%, 72%, and 74.60%, respectively for 2011, 2012 plan, and 2012 actual. Note that the plan numbers reflect basic budgeting concepts because with a sales increase of 16% we are leveraging to an operating margin and NOPAT growth of approximately 29%.

Exhibit 6

### Financial Statements for 3-Up “EP” Walks

2011	2012 Plan	2012 Actual
<i>P&amp;L</i>	<i>P&amp;L</i>	<i>P&amp;L</i>
Sales \$100	Sales \$116	Sales \$110
Costs 66	Costs 72	Costs 69
OM 34	OM 44	OM 41
NOPAT* \$20.40	NOPAT* \$26.40	NOPAT* \$24.60
<i>Total Capital (Ending)</i>	<i>Total Capital (Ending)</i>	<i>Total Capital (Ending)</i>
Cash \$0	Cash \$31.17	Cash \$34.00
A/R 33.33	A/R 29.00	A/R 19.19
Inventory 20.00	Inventory 13.65	Inventory 14.96
A/P 12.33	A/P 14.94	A/P 9.60
P&E 75.00	P&E 83.52	P&E 82.06
Total Capital \$116	Total Capital \$111.23	Total Capital \$106.60
Equity \$116	Equity \$142.40	Equity \$140.60
* Tax Rate 40%		

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The underlying assumptions to derive the variance walks, using equation #4, are price inflation of -1% and -3%, respectively, in 2012 plan and actual. Cost inflation is assumed to be 1% and 4%, respectively, in 2012 plan and actual. The aforementioned tax rate of 40% also is the rate used in the calculation of the cost of capital. We assume no interest-bearing debt (thus the cost of capital is technically a cost of equity, and the tax rate would not impact the cost of capital). The cost of capital is 12% and is assumed to be constant for tractibility across 2011, plan and actual. (To calculate the capital charge, we use the ending total capital, as opposed to beginning or 5-point moving average often seen in FP&A.) Exhibit 7 depicts the “3-Up” under our assumptions.

### Exhibit 7

## 2012 “EP” Variance Analysis – 3 Up Walks

		Variances (\$000s)						Comments on Plan to Actual
		Planning	Meeting Commitments		Growth			
<i>EP</i>	2011 Actual	\$6.48	2012 Plan	\$13.05	2012 Actual	\$6.48		
P&L EP Drivers	Price	-.70	+	-1.34	=	-2.04	Competitive pressure...failed to lock in forward price contract	
	Volume	3.50	+	-.77	=	2.73	Lost anticipated national account	
	Cost	-.43	+	-1.16	=	-1.59	E-Buy auction process delayed	
	Productivity	3.63	+	1.47	=	5.10	Lean Manufacturing Pulled Forward from 2013 in Q3	
+Σ								
Total Capital EP Drivers	A/R	.52	+	1.18	=	1.70	Cash Calls enhanced A/R Turns to 5.73 from 4.0 in plan	
	Inventory	.76	+	-.16	=	.60	Inventory Turns below plan due to Raw forward buy	
	A/P	.31	+	-.64	=	-.33	Two Key Suppliers Potential Bankruptcy Needs	
	P&E	-1.02	+	.18	=	-.84	Plant expansion relative to plan to meet 2013 capacity	
= EP	2012 Plan	\$13.05	2012 Actual	\$11.81	2012 Actual	\$11.81		

In this example, the actual EP in 2011 was \$6.48 with a plan of \$13.05. The variances show the contribution of each bucket to the delta of \$6.57. For example, Volume is expected to contribute \$3.50 of incremental EP during 2011. The value of planning variances is seeing where risks may lie in a plan.



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As another example, volume and productivity are expected to contribute approximately 50% each or over 100% combined of the incremental growth in EP. Is this realistic, given the capabilities of the sales organization, competitiveness of the industry, the power of the customers, our capacity, and our ability to deliver on whatever initiatives are embedded with the productivity? Of course, the answer may be yes, and the degree of what is under our control and not under our control would, hopefully, have been under review during the planning process.

If a driver such as price is providing 50% of the variance in EP in plan, and we are in very competitive markets, and we need a “prayer session,” as Buffet was quoted before, we just may have a very risky plan. In our opinion, this situation is an immediate red flag from a risk perspective. In a standard budget presentation, that risk insight would be close to impossible to detect regardless of how complex the income statement might be.

The Meeting Commitments column in Exhibit 7 is all about execution risk and the ability to deliver on a plan. Many business leaders would suggest that this is the most crucial discussion during an operational review. Positive and negative variances in Meeting Commitments need to be reviewed in terms of what is controllable or not. Reasonable people can differ on the level of control. Reasonable people also can differ on the materiality of a variance. For decades, Wall Street has had a preoccupation with meeting net income targets. In recent years, interest in meeting sales and cash commitments has increased. Internally as well, meeting commitments has increased in importance as the environment has become significantly more volatile. We strongly urge management to consider the importance of EP variances. One growing use is the application of stress and shock tests to assumptions, particularly in initial budgets. These tools also can be useful during scenario and other strategic planning efforts.

The Meeting Commitments column also is critical to the successful application of the technique often referred to as “Management by Exception.” The value add of this technique is that management probably should only spend time on material deviations from plan. Management by Exception also should include discussion around controllable and uncontrollable risks.

The final column represents the sources of growth in EP. Note the sum of the Planning and Meeting Commitments columns equal the Growth column, hence the previous comment about interrelatedness.

The graphical walk (or bridge charts) of the 3-Up can be seen in Exhibit 8. Grey and red bars are positive and negative variances, respectively.



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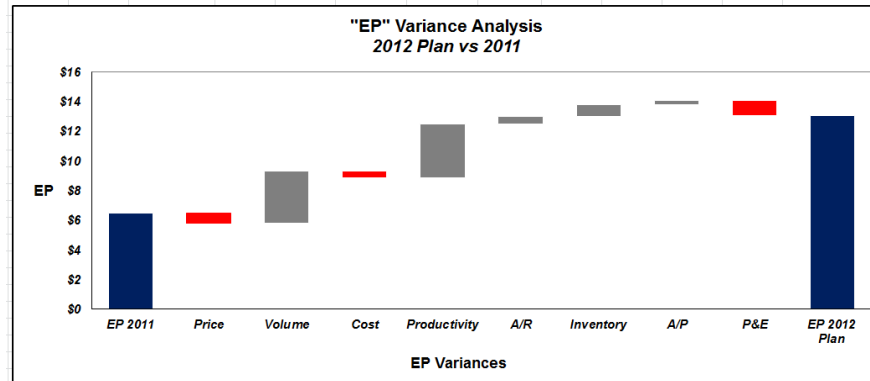
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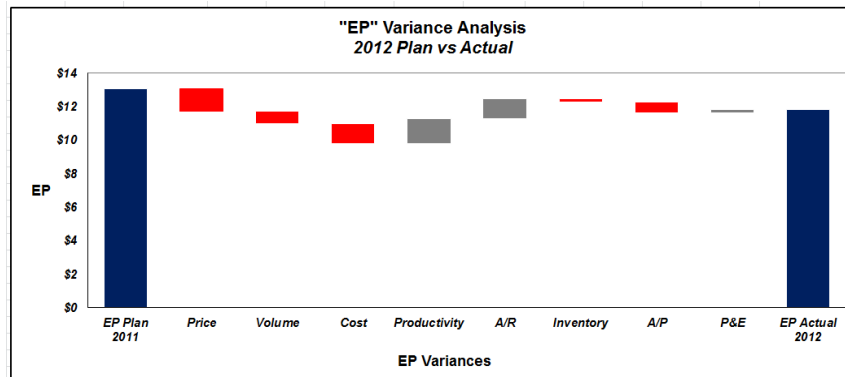
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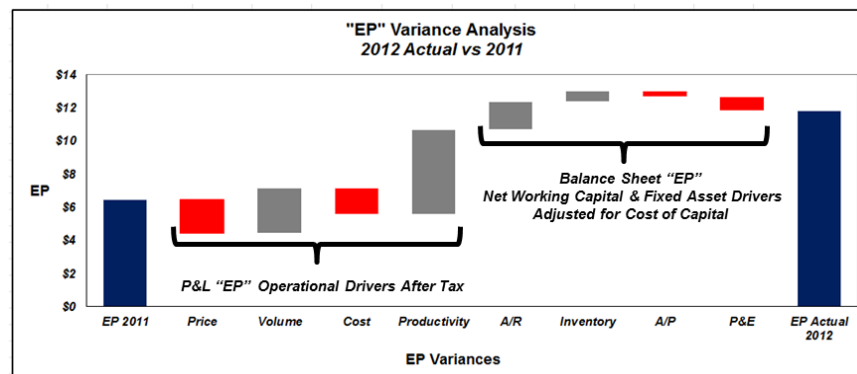
Exhibit 8 - TRI Corp's EP-Var<sup>®</sup>



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TRI's business simulations incorporate our **EP-Var**<sup>®</sup> system during operational reviews that are built around the "3-Up" method for both operating margin and EP.

### ***A Culture and Processes that Can Drive Success from EP***

One critical aspect for any employee, regardless of level, is to be able to know where to positively impact (and avoid negative impact) EP. True leaders need to make sure all their people never fail. Not knowing where you can impact a system is a great disadvantage and will quickly erode trust with everyone moving to "get under the radar." The question is can you find yourself in an EP system.

Numerous consultancies have evolved over the past few decades in the area of Value-Based Management (VBM). One of the primary measurements that many VBM providers espouse is EP, or something related that can link operational decisions to creation of shareholder value. In our opinion, true creation of shareholder value from an EP system requires a culture and processes that allow answering "Yes" to the questions in Exhibit 9.

#### **Exhibit 9**

### **Does Your VBM System Around EP Have the Following ?**

*Top Management Support and Involvement ?*

*A Linkage to Incentive Pay ?*

*A Balance of Short- and Long-Term ?*

*A System to Understand Variances (PY to Plan, Plan to Actual,  
PY to Actual) ?*

*Education and Training throughout all Levels of Your Business ?*

*The Merit of Simplicity ?*

*An Accounting System adaptable to Market Measurements ?*

*A Balance of Customer, Employee, Community and  
Financial Values Across all Aspects of Your Value Chain ?*

Support of EP must start at the top and be directly linked to a company's strategy. To be effective, any measure also has to be linked to remuneration. Remember the old saying, "*What gets measured gets managed.*" A quick review of the EP formulation reveals that certain actions can be implemented, such as delaying capital expenditures that, in the short-term, will increase EP to the detriment of the long-term. Another could be paying excessively slowly to decrease investment in net working capital and negatively impacting suppliers' on-going viability.



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Another could be paying excessively slowly to decrease investment in net working capital and negatively impact on suppliers' on-going viability. Because of the potential for this type of short-term optimization, EP incentive compensation needs a long-term component. This is the basis for banking a portion of EP benefit when that portion could be at risk if EP declines in the future.

We highly recommend that variances of EP be of three types: planning, meeting commitments, and growth. Many businesses have their annual get together of the top 100 and have great discussions around change and new ideas with everyone fully supporting. The problem is that once those infamous meetings are over the new idea rarely gets down to the troops, or if it does it becomes the flavor of the month.

Any system like EP requires education and training at all levels of the organization. This also is true of the incentive compensation. We have seen many organizations in which the top 100 are on board, and everyone else is essentially clueless. To drive EP down to all requires that the measurement be very simple and easy to understand so everyone can see where they fit in.

The accounting system in an ideal and theoretical framework would be able to use market values. This would be particularly true for the total capital. Remember the cost of capital is a market-based measure. Businesses with high degrees of capital intensity that have been around for decades will have book values, used in the total capital, that can be significantly below current market. EP with book values for total capital in our examples will be overstated because the capital charge will be understated. NOPAT by very definition of a recent period be much more aligned to market reality. Finally, not only is a short- and long-term balance essential but balance across all aspects of your value chain, including the interaction of customer, people and financial values, is critical.

### **Summary**

Creating value for shareholders from above average or abnormal profits has been a quest for centuries. One measure that has proven popular is Economic Profit (EP).

Our goals were to examine the basics of EP and its derivation, elaborate on potential applications for your business, and make sure you are aware of its pros and cons in practice. We introduced EP, our Critical Equation #8, as well its linkage to financial statements. Pricing power was shown to be a powerful driver of EP. Market Value Added was demonstrated to be the same as the well-known NPV from engineering economics. We introduced TRI Corp's EP-Var<sup>®</sup>, which looks at EP in terms of planning, meeting commitments, and growth variances. Finally, we asked ourselves some basic questions that are essential for EP to be an operational success.

The rest is up to you.

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