A Simplistic Model Examining Offshoring

Many companies choose to offshore their manufacturing and other labor such as call centers. The reason behind this is simple, foreign labor is cheaper, and this will increase the company's profit margin.

To explore this, let's take a look at Apple Inc., and make a few assumptions to see the potential impact of offshoring. Apple was not chosen for any reason, and this exercise could equally be applied to any set of financials. Let's make two simple assumptions: (1) that COGS is 50% labor-based, and (2) that this will be offshored at 20% of the original labor cost (i.e., it takes 5 workers overseas to equal one U.S. salary).

Apple's Income Statement from their 2013 10K is as follows:

Apple Inc.

$mm	**28-Sep-13**	**29-Sep-12**	**24-Sep-13**	**AVG**
Net sales	$170,910	$156,508	$108,252	$145,223
Cost of sales	$106,606	$87,846	$64,434	$86,295
Gross margin	$64,304	$68,662	$43,818	$58,928
Operating expenses				
Research and development	$4,475	$3,381	$2,431	$3,429
Selling, general and administrative	$10,830	$10,040	$7,601	$9,490
Total operating expenses	$15,305	$13,421	$10,032	$12,919
Operating income	$48,999	$55,241	$33,786	$46,009
Other income/(expense), net	$1,156	$522	$417	$698
Income before provision for income tax	$50,155	$55,763	$34,203	$46,707
Provision for income taxes	$13,118	$14,030	$8,285	$11,811
Net income	$37,037	$41,733	$25,918	$34,896
Gross Margin	*37.62%*	*43.87%*	*40.48%*	*40.58%*
Operating Margin	*29.35%*	*35.63%*	*31.60%*	*31.68%*
Profit Margin	*21.67%*	*26.67%*	*23.94%*	*24.03%*
Value to U.S. Society	$172,066	$157,030	$108,669	$145,922
% of Value to Shareholders	21.52%	26.58%	23.85%	23.91%

If we assume that their current income statement is totally U.S.-based (which it is not), and define value to U.S. Society as the COGS+Operating Expenses+Taxes+Net Income, because this is money paid out to various entities, such as suppliers, employees, utility companies, Uncle Sam, and the shareholders. The percentage of this value paid to the shareholders is assumed equal to the net income, because these are funds that can be used to pay dividends, repurchase stock, or retain – all of which are equity related.

Now let's apply the two simple offshoring assumptions to see how this changes Apple's financials:

Offshore Manufacturing Overseas @ 20% of labor cost
Assume that 50% of COGS is labor

Net sales	$170,910	$156,508	$108,252	$145,223
Cost of sales	$74,624	$61,492	$45,104	$60,407
Gross margin	$96,286	$95,016	$63,148	$84,817
Operating expenses				
Research and development	$4,475	$3,381	$2,431	$3,429
Selling, general and administrative	$10,830	$10,040	$7,601	$9,490
Total operating expenses	$15,305	$13,421	$10,032	$12,919
Operating income	$80,981	$81,595	$53,116	$71,897
Other income/(expense), net	$1,156	$522	$417	$698
Income before provision for income tax	$82,137	$82,117	$53,533	$72,596
Provision for income taxes	$21,483	$20,661	$12,967	$18,358
Net income	$60,654	$61,456	$40,566	$54,238
Gross Margin	*56.34%*	*60.71%*	*58.33%*	*58.40%*
Operating Margin	*48.06%*	*52.47%*	*49.45%*	*49.51%*
Profit Margin	*35.49%*	*39.27%*	*37.47%*	*37.34%*
Value to U.S. Society	$150,745	$139,461	$95,782	$128,663
Value Overseas	$21,321	$17,569	$12,887	$17,259
Total Value	$172,066	$157,030	$108,669	$145,922
% of Value to Shareholders	35.25%	39.14%	37.33%	37.17%

Notice the impact! Profit margin jumped from 24.03% to 37.35%, and the percentage of value going to the shareholders increased from 23.91% to 37.17%. Plus 11.88% of the value has shifted overseas, thus leaving the U.S. economy.

One could argue that this leads to concentration of wealth to the shareholders, and destabilization of the U.S. workforce, not to mention a loss of U.S. GDP to a foreign country. To a multinational company seeking profits, and gains for its shareholders, this looks very attractive, but to the common U.S. workforce, and U.S. economy overall, the benefit of offshoring, if any, is less clear.

The only way that this is not the case is if the reduction in COGS is passed along to the consumer via reduced prices, as seen in this model:

Offshore Manufacturing Overseas @ 20% of labor cost
Assume that 50% of COGS is labor

Net sales	$138,928	$130,154	$88,922	$119,335
Cost of sales	$74,624	$61,492	$45,104	$60,407
Gross margin	$64,304	$68,662	$43,818	$58,928
Operating expenses				
Research and development	$4,475	$3,381	$2,431	$3,429
Selling, general and administrative	$10,830	$10,040	$7,601	$9,490
Total operating expenses	$15,305	$13,421	$10,032	$12,919
Operating income	$48,999	$55,241	$33,786	$46,009
Other income/(expense), net	$1,156	$522	$417	$698
Income before provision for income tax	$50,155	$55,763	$34,203	$46,707
Provision for income taxes	$13,118	$14,030	$8,285	$11,811
Net income	$37,037	$41,733	$25,918	$34,896
Gross Margin	*46.29%*	*52.75%*	*49.28%*	*49.38%*
Operating Margin	*36.10%*	*42.84%*	*38.46%*	*38.55%*
Profit Margin	*26.66%*	*32.06%*	*29.15%*	*29.24%*
Value to U.S. Society	$150,745	$139,461	$95,782	$128,663
Value Overseas	$21,321	$17,569	$12,887	$17,259
Total Value	$172,066	$157,030	$108,669	$145,922
% of Value to Shareholders	21.52%	26.58%	23.85%	23.91%

Notice that when the savings in COGS result in reduced prices (i.e., reduced sales for the same volume sold), value created for the U.S. and foreign country remain the same, but the percent profit shared with the shareholder remains the same as before the offshoring, with the value instead being passed along to the customer. This model still results in a lowered GDP for the U.S., and the U.S. workforce is still destabilized, but goods in the U.S. are cheaper. The reality of offshoring is probably somewhere between these two models of reduced prices, and concentration of wealth to the shareholders.

This was obviously a very simplistic analysis, but sometimes this type of analysis is the best. Complexity could be added looking at foreign taxes, but the offshoring probably reduces the company's taxes overall, and reduces U.S. taxes, so is also inline with this simplistic analysis.