

Introduction to Business Interruption Insurance

Module 4: Gross Profit as the Sum Insured

The previous module described how a claim in respect of reduction in turnover is adjusted (reduced) for savings in expenses by multiplying the lost sales by the Rate of Gross Profit.

This is the deduction of savings in Material Costs and Freight.

Reduction in Turnover	\$3,600,000		
Less Savings			
Material Costs	-\$2,484,000	69%	
Freight	-\$36,000	1%	
	<u>\$1,080,000</u>	30%	

.....and this how the policy specifies that the claim is to be calculated:

<u>Claim in Respect of Reduction in Turnover</u>				
Rate of Gross Profit	x	Reduction in Turnover	=	<u>\$1,080,000</u>
30%	x	\$3,600,000	=	<u>\$1,080,000</u>

The 30% Rate of Gross Profit has been calculated by deducting Raw Materials and Freight as Uninsured Working Expenses. The policy definition of Gross Profit is:

“Gross Profit’ means the amount by which:

- (i) the sum of the turnover and the amount of the Closing Stock shall exceed;*
- (ii) the sum of the amount of the Opening Stock and the Uninsured Working Expenses.”*

The summarised financial statement and the calculation of Gross Profit (\$3,600,000) and Rate of Gross Profit (30%) based on this definition are:

Financial Statement

Sales	\$12,000,000
Cost of Sales	
Opening Stock	\$100,000
Purchases	\$8,350,000
sub-total	\$8,450,000
Less Closing Stock	-\$150,000
Material Costs	\$8,300,000
Gross Profit	\$3,700,000
Wages- Manufacturing	\$2,200,000
Other Expenses	
Depreciation	\$250,000
Rent	\$150,000
Salaries	\$500,000
Wages - Admin	\$225,000
Other (Incl Freight)	\$412,000
Total Other Expenses	\$1,537,000
Net Operating Profit/Loss	-\$37,000

Gross Profit and
 Rate of Gross Profit

Sales	\$12,000,000	100%
Plus Closing Stock	\$150,000	
Subtotal A	\$12,150,000	
Opening Stock	\$100,000	
Plus Uninsured Working Expenses		
Purchases	\$8,350,000	
Freight	\$100,000	
Subtotal B	\$8,550,000	
Insured Gross Profit (A-B)	\$3,600,000	30%

If expenses have been listed as Uninsured Working Expenses and deducted from the turnover to calculate Insured Gross Profit and the Rate of Gross Profit, as we have done with Material Costs (i.e. Purchases adjusted for opening and closing stock) and Freight, then savings in those expenses are automatically deducted from the loss of sales when the Rate of Gross Profit is applied to the reduction in turnover. (If this is not clear, I suggest you go back to look at the previous section again.)

Uninsured Working Expenses are deducted because they are uninsured. The implication is that they have been saved in proportion to the loss of sales.

The calculation of claim assumes these expenses have been saved in direct proportion to the reduction in turnover. Because there was a 30% loss of sales in our example, 30% of the Material Costs and 30% of the Freight have been allowed for as savings. The downside is that they have been deducted, not because they were saved **but because they were uninsured and it is therefore assumed that they have been saved**. The insurers and their loss adjusters will not even pause to consider whether

they have been saved or not. They will simply apply the Rate of Gross Profit as the policy defines it and the result is the deduction of Material Costs and Freight.

If, say, Freight is not directly variable and the savings are less than 30%, the calculation specified in the policy will not provide a full indemnity.

And so, why run the risk? Why not insure all expenses, even Material Costs? In other words, why not just insure Turnover?

Because, if you insure expenses that are directly variable with sales, the sum insured for Gross Profit will be unnecessarily inflated. This increases the premium. But it doesn't similarly inflate the claim because, if there are savings in expenses that have been insured, those savings will be deducted from the claim. The specification of the Gross Profit Item states:

"less any sum saved during the Indemnity Period in respect of such charges and expenses of the Business payable out of Gross Profit as may cease or be reduced in consequence of the Damage."

The distinction is that uninsured expenses are deducted whether they have been saved or not. Insured expenses are deducted only if they have been saved.

So if Raw Material Costs and Freight have been insured (i.e. There are no Uninsured Working Expenses.) the policy holder will be paying a premium to insure expenses that are expected to be variable and expected to be saved in direct proportion to a reduction in turnover in the event of interruption to the business.

So why insure them?

Based on the accounts we have referred to as an example, the insured would be paying a premium on \$12 million (turnover) instead of on \$3.6 million (Gross Profit).

Sales	\$12,000,000	100%
Plus Closing Stock	<u>\$150,000</u>	
Subtotal A	\$12,150,000	
Opening Stock	\$100,000	
Plus Uninsured Working Expenses		
Purchases	\$8,350,000	
Freight	<u>\$100,000</u>	
Subtotal B	\$8,550,000	
<u>Insured Gross Profit (A-B)</u>	<u>\$3,600,000</u>	30%

To achieve the correct balance between over-insuring and paying unnecessary premium, on the one hand, or under-insuring on the other hand, is not so difficult. There is a simple rule:

Expenses should be listed as uninsured only if they are directly variable with turnover or output in all possible circumstances of business interruption.

You might encounter clients who ask of each expense in their Statement of Financial Performance, "Will there be savings in this expense in a major business interruption?"

This is the wrong question.

They should ask, "Is this expense so directly variable that, in the event of a small, say 10%, loss of sales or output, this expense will also reduce by 10%?"

i.e. Is it totally, 100% variable?

If it is totally, directly, 100% variable, it does not need to be insured. If there is a 10% loss of sales there will be a 10% saving in this expense and the 90% of maintained sales will be sufficient to recover the 90% cost ongoing in respect of this expense.

Examples are:

Material Costs (i.e. Purchases adjusted for opening and closing stock)
Packaging Materials
Freight
Sales Commissions
Royalties
Outwork

If there were a 10% loss of sales, one would expect a 10% saving in Material Costs, Packaging, Freight, Commissions, Royalties and Outwork. If there were a 35% loss of sales, one would expect a 35% saving in each of them, and so on.

Therefore, to illustrate the calculation of Insured Gross Profit and Rate of Gross Profit set out exactly in accordance with the policy, first I will show you again the calculation I did, a moment ago:

Sales	\$12,000,000	100%
Plus Closing Stock	<u>\$150,000</u>	
Subtotal A	\$12,150,000	
Opening Stock	\$100,000	
Plus Uninsured Working Expenses		
Purchases	\$8,350,000	
Freight	<u>\$100,000</u>	
Subtotal B	\$8,550,000	
<u>Insured Gross Profit (A-B)</u>	<u><u>\$3,600,000</u></u>	30%

Subject to the necessary allowance for trends of the business that I will describe later, the sum insured for Insured Gross Profit should be \$3.6 million and the Rate of Gross Profit used in a claim would be 30%.

Before leaving Insured Gross Profit and the Rate of Gross Profit I must elaborate on something I said and passed over quickly.

I said that, "If there is a 35% loss of sales, one would expect a 35% saving in Materials and Freight".

I deliberately stated this in an equivocal manner. I could have said "There will be a saving" But I said, "One would expect."

I expressed myself this way because I would expect Materials and Freight to be totally variable expenses, which do not need to be insured. I would also expect Commissions, Discounts, Outwork, Bad Debts, Duty, Packaging and Royalties, to be directly variable and therefore uninsured.

However, you must discuss the nature of each expense with your client because there are circumstances and cost structures in which any one of them might not be totally variable.

I therefore make a small fine-tuning adjustment to the rule about which expenses to insure and which to list as uninsured.

Expenses should be listed as uninsured only if, **in the context of a particular client's business and cost structure** they are directly variable with turnover or output in all possible circumstances of business interruption.

If this all gets too complicated for your client or the client is reluctant to give you details of its financial performance there is a simple short cut solution. Ask for sales and purchases. Insured Gross Profit is approximately Sales less Purchases.

Sales	\$12,000,000
less Purchases	\$8,350,000
Insured Gross Profit	<u><u>\$3,650,000</u></u>

Which compares with the more correct and detailed calculation as follows:

Sales	\$12,000,000
Plus Closing Stock	<u>\$150,000</u>
Subtotal A	\$12,150,000
Opening Stock	\$100,000
Plus Uninsured Working Expenses	
Purchases	\$8,350,000
Freight	<u>\$100,000</u>
Subtotal B	\$8,550,000
Insured Gross Profit (A-B)	<u><u>\$3,600,000</u></u>

Is it worth the bother to do it correctly?

Well, I would have to conclude from this example that it is not. However, if there are significant expenses in addition to Purchases that are directly variable, the fact that they are not listed as uninsured could result in a degree of over-insurance.

If closing stock were substantially greater than opening stock this shortcut could result in under-insurance. But this potential pitfall can be avoided by asking whether any material increase or decrease in stock between opening and closing stock is shown in the accounts. The amount of an increase in stock should be added to the Insured Gross Profit and a decrease should be deducted from the Insured Gross Profit.

Alternatively, ask for Turnover and Material Costs. Because Material Costs comprise Purchases adjusted for opening and closing stock no further allowance is needed for stock increase or decrease.

Before continuing, let's recap what we have learned about Gross Profit in this module.

Review

- 1 Gross Profit is used as the sum insured for the basic policy item in business interruption insurance.**
- 2 Insured Gross Profit can be calculated from a Statement of Financial Performance, simply by taking Sales minus Purchases.**
- 3 But this is inaccurate if there has been a significant difference between opening and closing stock and/or if there are other expenses that are directly variable with turnover or production.**
- 4 If the calculation of Insured Gross Profit is to be done correctly, it is:**

**Turnover plus closing stock
Less opening stock, purchases and other uninsured expenses**
- 5 Uninsured expenses are only those that are directly variable in the circumstances of a particular client's business.**
- 6 By multiplying the loss of sales by the Rate of Gross Profit the claim for loss of sales is adjusted for savings in the Uninsured Working Expenses.**
- 7 The loss adjuster does not need to identify that there were actual savings in these expenses. Because they are uninsured the claim assumes they will have been saved in direct proportion to the loss of sales.**

Insuring Future Gross Profit

I will add two comments before we leave the subject of Insured Gross Profit.

**Business Interruption policies do not
insure historical profit.
They insure future profit.**

Therefore the Gross Profit calculated from the Statement of Financial Performance must be adjusted for growth trends and special circumstances so that the sum insured is the best possible estimate of the Insured Gross Profit that the client expects to achieve in the future; actually projected as far as the year **after the end of the insurance period.**

For example, the Insured Gross Profit that we have calculated at \$3.6 million might have been based on the financial year ended 31 March 2004.

We might be dealing with a client whose insurance period goes from 1 September 2004 to 1 September 2005.

But if major damage occurred on 31 August 2005, which interrupted the business over the next 12 months, (i.e. to 31 August 2006) the sum insured from 1 September 2004 must be adequate for this future Indemnity Period.

The year ended 31 August 2006 is two and a half years on from the financial year on which the \$3.6 million is calculated. Compounding growth rates of, say, 10% could require the figure to be increased to \$4,537,500, an increase of nearly \$1 million.

Insured Gross Profit	
based on accounts for y/e 31 March 2004	\$3,600,000
plus 10% pa for 5 months to 1 September 2004 (i.e. to start of Insurance Period)	\$150,000
	Subtotal \$3,750,000
plus 10% pa to 1 September 2005 (i.e. to end of Insurance Period)	\$375,000
	Subtotal \$4,125,000
plus 10% pa to 31 August 2006 (i.e. end of the most distant possible 12 month indemnity period should damage occur at the end of the Insurance Period, say 31 August 2004)	\$412,500
	Subtotal \$4,537,500
Sum Insured	\$4,537,500

The sum insured for Insured Gross Profit must be adequate to cover the maximum possible loss and adequate to avoid the application of average. This calculation satisfies both criteria.

The second of our two final points about Insured Gross Profit is the Indemnity Period, which also impacts the sum insured.

BI policies insure the loss of profit for a limited period; say a maximum of 12 or 18 months. This maximum is the Indemnity Period selected by the insured and stated in the Schedule of the policy. We have seen it referred to in the specification of the Gross Profit Item and in the definition of historical Standard Turnover.

Up to this point all the calculations of Gross Profit are based on a set of accounts, which we assumed to be for a full financial year and the calculation of an appropriate sum insured for Gross Profit is also an annual figure. This is correct unless the maximum Indemnity Period stated in the policy is in excess of twelve months, in which case the sum insured needs to be a proportionate multiple of annual Gross Profit, e.g. 150% for an 18 month Indemnity Period.

**For maximum indemnity periods in excess of 12 months the
sum insured must be a proportionate multiple of the annual
Gross Profit**

The full calculation for an 18 month maximum Indemnity Period is:

Insured Gross Profit	
based on accounts for y/e 31 March 2004	\$3,600,000
plus 10% pa for 5 months to 1 September 2004 (i.e. to start of Insurance Period)	\$150,000
	Subtotal <u>\$3,750,000</u>
plus 10% pa to 1 September 2005 (i.e. to end of Insurance Period)	\$375,000
	Subtotal <u>\$4,125,000</u>
plus 10% pa to 31 August 2006 (i.e. end of the most distant possible 12 month indemnity period should damage occur at the end of the Insurance Period, say 31 August 2004)	\$412,500
	Subtotal <u>\$4,537,500</u>
Multiple for an 18 month Indemnity Period	150%
Appropriate Sum Insured	<u><u>\$6,806,250</u></u>

I hasten to state that although the sum insured is multiplied proportionately for Indemnity Periods in excess of 12 months it is not reduced for lesser Indemnity Periods. A six-month Indemnity Period should still have annual Insured Gross Profit as the sum insured.

This annual Gross Profit will be larger than the maximum possible BI claim in a six-month maximum Indemnity Period in all but extremely highly seasonal businesses. However, irrespective of whether there is an average condition in the policy, it is likely that the figure for the sum insured in the proposal is stated to be annual Gross Profit in which case a six-month figure might be construed as material misrepresentation of the value at risk.

Review

- 1 The sum insured must be adequate to cover the maximum possible loss and to avoid the possibility of average.**
- 2 The sum insured must be the best possible projection of Gross Profit for the 12 months past the end of the current insurance period.**
- 3 For maximum Indemnity Periods in excess of 12 months a multiple of annual Gross Profit must be used as the sum insured**

Because average is not usually a feature of BI policies in New Zealand I don't intend to address it at this stage. It will be covered in a later module. The assessment of maximum possible losses from a BI perspective will be the subject of a separate article.

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