

General BI Subjects

Output: The Alternative Index (When to Use Output as an Alternative to Turnover)

The Output Clause or Alternative Index Clause is a standard addition to BI policies for the purpose of providing further flexibility in the calculation of a sum that fairly reflects a claimant's financial loss.

My opinion is that any assessment of financial loss must eventually relate to a reduction in sales. The long-term financial health of businesses is dependent on turnover. Output does not pay the costs nor generate the profit. That is only achieved through sales. Why, then, do we ever use output in the assessment of a BI claim?

The Output or Alternative Index Clause

There are several versions in current use, the most common being:

"In the event of a claim under this policy adjustment may be based on "turnover" or "output" or whatever other index of business activity affords the most equitable result.

Wherever the word "turnover" is used in this policy it will be read as "turnover or alternative index" except in the definition of turnover."

Instead of basing a claim on the reduction in turnover we have the option of calculating the reduction in output if by doing so, we can produce a more equitable result.

What difference could it possibly make and when might an output-based calculation be more equitable than a turnover-based calculation?

Case Study: The difference between output and turnover

I learned about the importance of the difference as a very new BI adjuster. My mentor and I were dealing with a claim for BI following machinery breakdown of a bale press at a pulp mill. The loss was approximately \$500,000, which was serious money in the early 1970's.

This was the loss of insured Gross Profit based on the sales value of the output lost during the 6 month maximum Indemnity Period but the policy was specified in the conventional form and **did not contain an Output Clause**. In those ancient days the output option was not automatically included in BI policies. We had to calculate the loss based on the reduction in turnover because that is what the policy stated:

"Item 1: Gross Profit

*The insurance under this Item is limited to the loss of Gross Profit due to (a) **reduction in turnover** and (b) increase in cost of working and the amount payable as indemnity under this Item shall be:*

*"(a) in respect of **reduction in Turnover**, the sum produced by applying the Rate of Gross Profit to the amount by which the **Turnover** during the Indemnity Period, in consequence of the Damage, falls short of the **Standard Turnover**."*

"Turnover" was defined as *"The money paid or payable for goods sold and delivered and for services rendered in the course of the Business at the premises."*

On inquiry we established that the goods (export pulp) were sold at the time they were loaded onto the ship at the port and it was "trimmed and ready to sail". It was also agreed that no ship that was scheduled to pick up pulp at the port during the 6 months Indemnity Period following the breakdown had been diverted and no ship sailed away less than fully laden.

Therefore there was no reduction in **turnover** during the Indemnity Period. As a result of the machinery breakdown there was definitely a reduction in **output** but this did not cause a reduction in turnover until some time outside the maximum 6 month Indemnity Period. The level of finished stock at the end of the Indemnity Period was less than it would have been but for the breakdown, but there was no loss of sales during the Indemnity Period.

(Note: There was no Accumulated Stock Clause, either.)

It was not debated that a reduction in turnover occurred eventually because this company operated 168 hours per week at its maximum achievable output rate and could sell its entire output on world markets. A loss of output would inevitably lead to a reduction in turnover eventually. But not necessarily within the 6 month maximum Indemnity Period.

This illustrates the critical difference between turnover and output. It was a matter of timing. The difference between turnover and output in any period is reflected in a change in the level of finished stock. For example, in a more recent claim in the petro-chemical industry:

	Q1	Q2	Q3	Q4	Annual
	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	
Opening Stock	19,500	33,077	43,652	38,782	19,500
Production	66,577	69,075	73,130	71,526	280,308
Sales	53,000	58,500	78,000	72,000	261,500
Closing Stock	33,077	43,652	38,782	38,308	38,308

During the 12 months production (“output”) was greater than sales (“turnover”) by 18,808 tonnes ($280,308 - 261,500 = 18,808$) and this is reflected in an increase in the level of finished stock of 18,808 tonnes ($38,308 - 19,500 = 18,808$).

“The Most Equitable Result”

I would like to make several points from the pulp mill case study to illustrate the issues relating to an Output Clause.

1 Adequacy of the Indemnity Period

The insured believed that a 6 month Indemnity Period was adequate to repair any conceivable breakdown damage and resume normal business operations. Its maximum BI loss exposure was the insured Gross Profit on 6 months of output.

I think it would be superficial to suggest that its problems with this claim would have been resolved if there had been a, say, 12 month Indemnity Period. Let us assume that the claim involved a loss of output of 5,000 tonnes. How do you think insurers would have reacted if there had been a 12 month Indemnity Period and within that 12 months a ship with 12,000 tonnes available capacity was diverted because the stock of pulp at the wharf was only 7,000 tonnes?

But for the breakdown the stock at that point would have been 12,000 tonnes and the ship would not have been diverted. The reduction in turnover resulting from the breakdown would have been equal to the one shipload – i.e. 12,000 tonnes.

2 Output is immediately and directly impacted

The point is therefore, that the true measure of the financial loss was related to the loss of output. This was most directly and immediately affected by the breakdown. Turnover, on the other hand, was not immediately affected and the timing of it was dictated by shipping schedules, the ability to divert ships, the economics of incompletely loading a ship and the level of finished stock waiting at the wharf.

3 Which is more equitable?

The loss of output provided the most accurate measure of the severity of the interruption and the sales value of the lost output was the most accurate base for measuring the insured’s financial loss.

The loss of output occurred entirely within the maximum available Indemnity Period.

In my opinion it is more equitable to base a BI claim on output if this is the index which, given the constraints of the Indemnity Period, most correctly measures the financial loss. In the example, turnover in any defined period could be distorted by the timing of ships arriving into the port and as a measure of the loss, could produce more or less than a correct indemnity.

If there is no Output Clause

Modern BI policies almost invariably contain an Output or Alternative Index Clause but it is useful to consider when a claim might use output instead of turnover if there is no such clause because it does emphasise why the clause is so important.

In some claims the operating circumstances of the business are such that we can be certain that the loss of output during the Indemnity Period will cause an equivalent reduction in turnover during the Indemnity Period.

Case Study: When loss of output equals loss of turnover

A recent claim involved export of a product to markets in Asia. The factory operated at capacity year round, stopping only for routine operational downtime and a scheduled annual maintenance period. Demand exceeded supply and all production was shipped within 2 months of production.

A fire shut one of its production lines for 3 months and the measured loss of output was 18,000 tonnes. We can deduce that within 5 months there was a reduction in turnover of 18,000 tonnes (3 months interruption plus 2 months lag from production to shipping). Because the maximum Indemnity Period under the policy was 12 months we knew that the loss of output during the Indemnity Period was exactly equal to the reduction in turnover during the Indemnity Period.

As with the export pulp manufacturer, it was simpler and more accurate to measure the loss on output, converting it, of course, to its dollar sales value, than to identify the reduction from an analysis of turnover data. We didn't need the authority of an Output Clause because the loss of output within the maximum Indemnity Period was the same as the reduction in turnover within the maximum Indemnity Period.

If the maximum Indemnity Period had been only 3 months the situation would have been entirely different because a significant portion of the lost output would not have been sold within the Indemnity Period (i.e. sold within two further months, which would be outside a 3 month Indemnity Period). We would not have been able to use output as a convenient measure of turnover.

Case Study: When loss of turnover could not be identified

I recall, also, the claim of the manufacturer of a range of sizes and colours of its products, which then went into stock from which sales were made. Various lines ran out from time to time because of the interruption to production following fire damage. It normally produced at capacity and it was claimed that the measurable loss of output could not be caught up and would eventually result in an equivalent reduction in turnover. However the lost sales were delayed by the buffer stock of finished goods and were spread over an extended period.

Because the loss was not large it was not possible to measure it accurately by analysing sales trends to identify the variance.

My conclusion from all the facts of the business's production and sales operations was that by using output, I was, in fact, measuring the reduction in turnover but doing so with a great deal more accuracy that would have been achieved from looking at sales statistics alone.

Output at the Option of the Insured

There are policies that allow adjustment to be based on output at the insured's option.

It is not easy for an insured to take advantage of this option but it could happen.

I have suggested that it is more equitable to use output if the entire loss of output is within the maximum Indemnity Period even if the total reduction in turnover is not, but this is not mandated anywhere that I know of. However, allowing the use of output to be at the insured's opinion would certainly remove any necessity for the issue to be debated and so that is a point in its favour.

Possibly the insured could take advantage in circumstances in which a loss of output within the Indemnity Period can be recovered after the end of the Indemnity Period. If turnover were to be maintained in the interim from accumulated stocks of finished goods and no loss of turnover occurred then output is not an equitable measure (i.e. loss of output during the Indemnity Period is more than the long term reduction in turnover).

Output and Time Deductibles

I remind you that the difference between output and turnover is one of timing. This is critical to the assessment of time deductibles.

Although rarely defined with precision, the intention of time deductibles in BI policies is to exclude the loss within a stated period, say, 30 days from the date of damage. Within such a short period there is potential for a significant difference between a turnover-based calculation and an output-based calculation.

Case Study: Loss of turnover is all outside the deductible period

An intruder on the roof of a cement plant was shot in the leg by the security guard. Unfortunately the intruder fell off the roof and was killed. (This did not happen in NZ.) Local villagers torched a section of the plant in retaliation and it lost 40% of its output over the next 3 months.

The policy had a 30-day time excess. During this period turnover was maintained from stocks but a reduction in sales occurred over the next 3 months (i.e. 2nd to 4th months of the Indemnity Period) that was equal to the 40% loss of output.

If the claim assessment were to be based on reduction in turnover the timing of the entire loss would be outside the 30-day deductible period. If it were based on reduction in output the entire loss in the first 30 days would be excluded from the claim. Which index produces the more equitable result, turnover or output?

If the policy allows the selection at the option of the insured it will obviously choose turnover, thus moving the entire loss outside the time deductible.

If one has to select on the basis of whichever produces the more equitable result perhaps the intention of the parties is relevant. Did the insured select a 30-day time deductible because it knew that it carried sufficient stock to maintain sales for 30 days after any damage incident? Or did it intend to carry the loss, itself, equivalent to 30 days of lost output?

Usually the intention of both insured and insurer is that the insured carries the loss based on the first 30 days loss of output.

Reduction in Output

In most BI claims the decision to use output as the more equitable index of the loss implies that the insured cannot recoup the loss of output and therefore a reduction in turnover is inevitable. This tends to be limited to 24-hour x 7-day operations, which are not seasonal. (Sales might be seasonal but production is not.)

Therefore the year-on-year comparison of monthly production to identify pre-damage output trends is not useful. Module 6 in this series deals in detail with the analysis of sales trends but it has no application to output. I will address the calculation of reduction in output in a module in the "Advanced BI Subjects" section.

Rate of Gross Profit

I remind you of the typical Output or Alternative Index Clause.

"In the event of a claim under this policy adjustment may be based on "turnover" or "output" or whatever other index of business activity affords the most equitable result.

Wherever the word "turnover" is used in this policy it will be read as "turnover or alternative index" except in the definition of turnover."

The word "turnover" appears also in the definition of Gross Profit and Rate of Gross Profit. The circumstances in which "output" could or should be substituted for "turnover" in these definitions will be the subject of another module in "Advanced BI Subjects".

Other Indices of Loss

By now you will agree that if an insured business has adequate productive resources, raw materials, labour and working capital to produce everything it can possibly sell, then sales comprises the critical limiting factor. A BI claim should be based on the identifiable loss of sales.

If the insured business can sell everything it can produce with its plant capacity, raw materials, labour and working capital, then production is the limiting factor and a BI claim should be based on loss of output.

Some industries are limited by the availability of raw materials or labour and in these circumstances the most equitable index might be neither turnover nor output.

- A vegetable canning factory's claim might be based on the available crops that it could not process into cans.
- A wine bottling plant might use the litres it had contracted, but could not bottle.
- A dairy factory would use milk flow from its farmer suppliers (except that its plant capacity might be the limiting factor at the flush of the season).
- I dealt recently with an apple-packing shed for which the index of loss was the quantities of apples that were produced in the season by all growers that had contracted to it for their packing.
- If a retailer can show that it always sells the total available stock during the season, the reduction in turnover might be assessed on the retail value of the damaged stock.

These are not really alternative indices. They are just more simple ways of identifying the reduction in turnover.

Conclusion

If the BI policy leaves the selection of an index of loss to the insured it might choose "output" in circumstances in which it will be more than indemnified. This could occur if the loss of output during the maximum Indemnity Period is greater than the total long-term reduction in turnover. Another possibility is that it could avoid the intention of a time deductible period by choosing turnover instead of output so that the loss (i.e. reduction in turnover) is outside the deductible period.

Usually, however, the claim must use the index that produces the more equitable result and I would select the index that most adequately indemnifies the insured for its loss by placing it within the maximum Indemnity Period. Output should only be used if it is clear that the loss of output will result in an equivalent reduction in turnover; i.e. the loss of output cannot be recouped before the sales are lost, which implies that the insured's capacity is fully utilised or the sales are highly seasonal and there is spare capacity in the off-season but it cannot be used to make up sales that have already been lost.

If the total loss of output and the total reduction in turnover are both within the Indemnity Period, which index most directly identifies the loss? Turnover is always the key and other indices are only appropriate if they measure an eventual reduction in turnover.

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