FACTSHEET 008 – PAYMENT CURVES

Background

Modification to Contractor payments based on actual Contractor performance is one of the fundamental tenets of the Performance Based Contracting (PBC) approach. These modifications can be achieved through a number of different methods, but generally use a **Payment Curve** to outline how these payments are modified. Before we examine the different types of Payment Curves let's look at the common features:

Features of a Generic Payment Curve

Figure 1 illustrates a generic **Payment Curve.** This is based on the Support variant of the Australian Standard for Defence Contracting (ASDEFCON) series of contract templates used by the Australian Department of Defence.

Before we examine the key features, it is important to note that each **Key Performance Indicator (KPI)**, or payment performance measure, will have their own Payment Curve. For example, if your PBC had 3 KPIs there may be 3 Payment Curves which are each likely to be different.

Noting this, let's examine some of the key features of a Payment Curve.

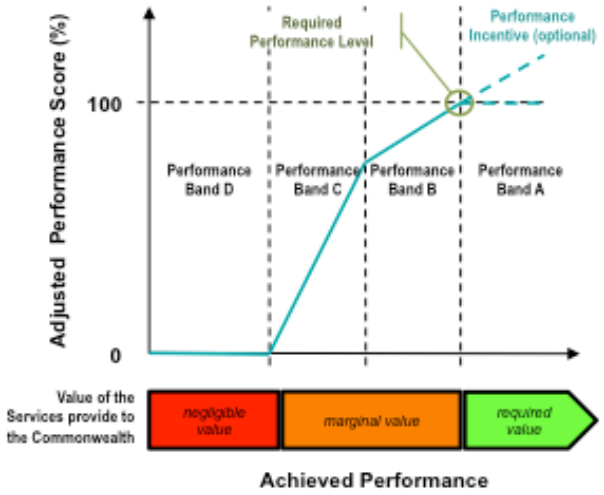


Figure 1: Generic Payment Curve

The most important feature is that there are 2 dimensions to the Payment Curve. Firstly, the horizontal axis or line, called **Achieved Performance**, and secondly the vertical axis or line, called the **Adjusted Performance Score** or **APS**. The overall intent of the Payment Curve is to change Contractor performance into Contractor payment.

The Achieved Performance represents the actual score that the Contractor reached for the particular Review Period. This could be for an individual event such as deeper maintenance; or over a period of time such as a month or a quarter. Importantly, the unit of measurement for the Achieved Performance reached reflects the unit of the relevant KPI and can reflect time (e.g. hours, days, etc.), or other values (eg. number of items, percentages, etc.)

In contrast, the APS is the percentage of Contractor payments linked to the KPI that the Contractor should be paid, based on their corresponding Achieved Performance. The unit of APS is always a percentage. Accordingly, many practitioners consider the Payment Curve as a method of translating Achieved Performance to APS.

Performance Bands

The second feature is the definition of Performance Bands in the Payment Curve as illustrated in Figure 1. Performance Bands are used as part of the overall management of Contractor performance through the application of additional rewards and remedies. ASDEFCON (Support) uses 4 Performance Bands as follows:

1. ***Performance Band A*** represents levels of performance that equals or exceeds the Required Performance Level. Where over-performance is of value to the Commonwealth, it may specify an incentive to be included in the Performance Payment. If this is not the case, the APS for Performance Band A is set to 100%.
2. ***Performance Band B*** represents levels of performance that are slightly less than the Required Performance Level. It allows for minor variations in results, which are considered to have a small, but tangible, impact on the value of the Services. The slope of the Performance Curve discourages performance that falls below the Required Performance Level.
3. ***Performance Band C*** represents levels of performance that may be tolerable for a short term but unsatisfactory in the medium or longer term because of the diminished value of the Services. The slope of the performance curve will cause the APS to reduce rapidly as the Achieved Performance degrades and the Contractor may trigger other remedies under the Contract for Achieved Performance in Performance Band C.
4. ***Performance Band D*** represents levels of performance where the value of the Services delivered is considered to be negligible because the Commonwealth's ability to attain the required Outcomes are significantly affected. Achieved Performance in Performance Band D will result in an APS of 0% and the Contractor may trigger other remedies under the Contract for Achieved Performance in Performance Band D.

How the Payment Curve Operates

At the end of the Review Period (e.g. month, quarter, etc.) when the Contractor's payment is to be calculated, the Contractor's Achieved Score is determined by the KPI formula and business rules. The Review Period Achieved Score (in the units of the KPI, such as days) is then compared to the specific Payment Curve to determine the APS as a percentage.

Types of Payment Curves

There are 4 types of Payment Curves used in PBCs. They are as follows:

1. All or None Payment Curves
2. Linear Payment Curves
3. Non-Linear Payment Curves
4. Alternative Payment Curves, including Demerit Point and Visual Payment Curves.

All or None Payment Curves

Simply put, if the required contracted level of performance is met, 100% payment is received. If the required level of performance is not met, 0% of payment is received. This can be seen in Figure 2. It should be noted that the two charts in Figure 2 represent the two cases where (1) any decrease in achieved performance is detrimental to the Commonwealth, and where (2) an increase in achieved performance is detrimental.

This is typical of any Contract that contains Liquidated Damages (LD) clauses where poor performance, often in terms of a delay of delivery, results in the awarding of a pre-agreed genuine estimate of financial damages to the Commonwealth.

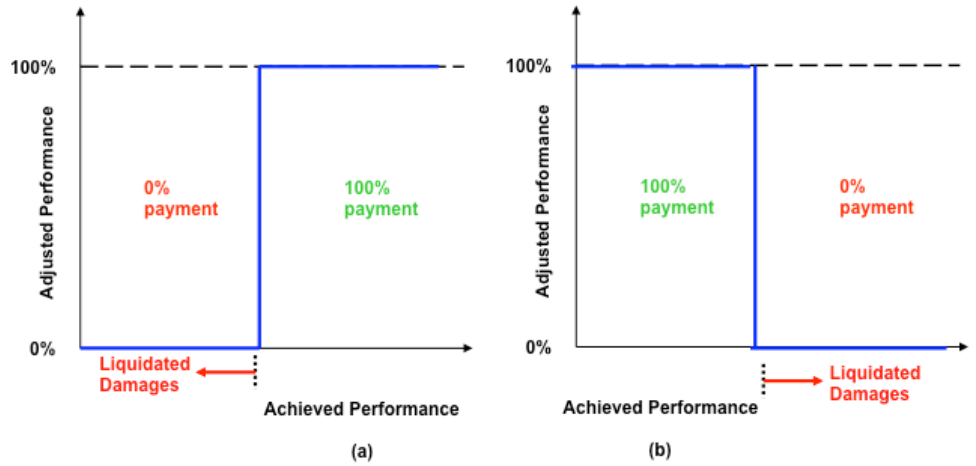


Figure 2: All or None Payment Curve

Liquidated Damages (LDs)

There is a common misunderstanding that a PBC approach that ties Contractor payment to performance replaces any requirement for Liquidated Damages (LDs). Where appropriate, LDs are included against traditional contract milestones, such as establishment of the Contractor support organisation (e.g. Operative Date (OD)).

However, LDs can also be used in conjunction with a PBC payment curve. LDs may be applied where there is no value to the Commonwealth in the level of service provided by the Contractor. As damage has occurred an alternative method for delivery of the services required must be considered.

Linear Payment Curves

Unlike the All or None Payment Curve, the Linear Payment Curve reduces payment based on a straight line between the Achieved Performance and variation from the contracted level. It should be noted that 0% Adjusted Performance does not have to occur at 0% Achieved Performance. Alternatively, this linear form can be represented through a series of equal steps. This can be seen in Figure 3:

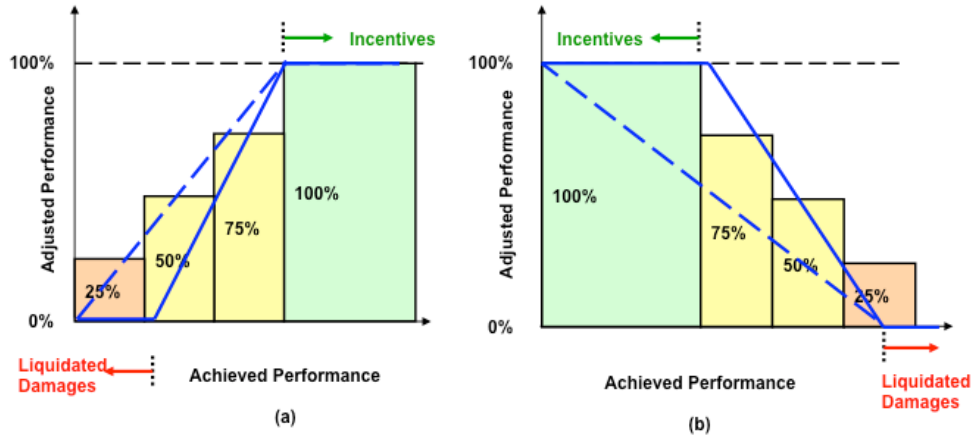


Figure 3: Linear Payment Curve

Non-Linear Payment Curves

Similar to the Linear Payment Curve, the Non-Linear Payment Curve reduces payment based on Achieved Performance variation from the contracted level. However, in this case the reduction in payment is represented by a curve, multiple linear sections, or an unequal series of steps. These variations can be seen in Figure 4:

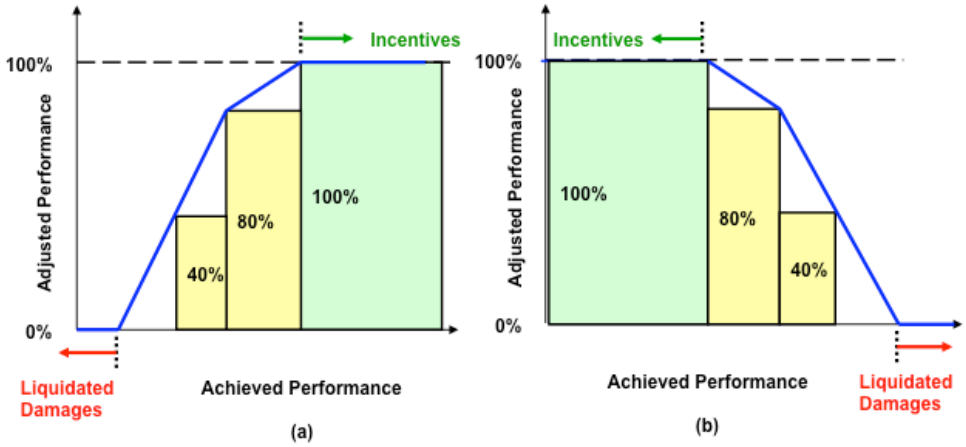


Figure 4: Non-Linear Payment Curve

Alternate Payment Curves – Demerit Point

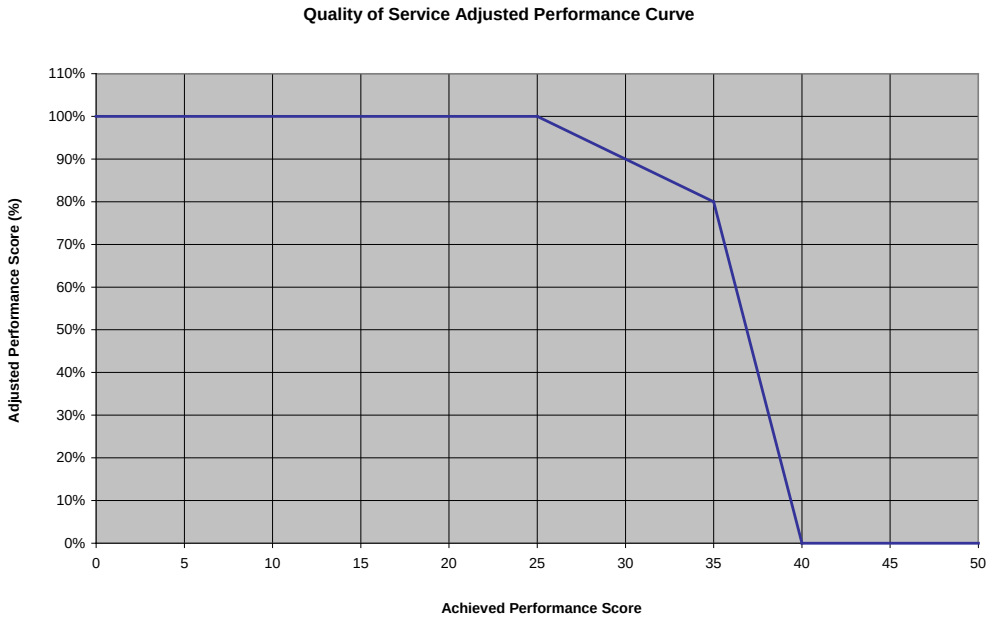
While not strictly a Payment Curve, the Demerit Point approach measures the total number of **Demerit Points** incurred during a Review Period and modifies Contractor Payment accordingly. This is based on assessment of the performance of each event. Where the event experiences reduced performance or non-performance, Demerit Points are awarded based on how significant/important the event is. For example, Table 1 highlights one option to determine the number of demerit points based on how significant/important the event is:

Criticality Rating		**Score**
Extreme	Catastrophic failure would cause catastrophic damage or loss of life and the function, design or equipment/ system cannot be practically tested except by full exposure to the risk	10
High	Critical failure would not immediately hazard life but could be a threat to life if not corrected or could cause serious injury. Failure would require critical system shut down or significant loss of performance. **Or** Catastrophic risks where safeguards to prevent occurrence can be fully tested.	8
Medium	Major failure would result in only minor injury or damage or affect the performance of a sub system.	5
Low	Major failure would require first aid only or cause only minor disruption.	2

Table 1: Demerit Point Evaluation

The total amount of Demerit Points incurred for all events in the Review Period is used to determine the payment. **Note: This Graph is for illustrative purposes only**

Figure 5 illustrates the corresponding **Demerit Point Payment Curve** for Table 1:



Note: This Graph is for illustrative purposes only

Figure 5: Demerit Point Payment Curve

Alternate Payment Curves – Visual

Unlike the other Payment Curves, the Visual Payment Method uses visual indicators (e.g. 'dots') to register satisfaction. This includes partial, of softer subjective measures such as customer satisfaction, quality of a meal, etc. This approach can combine many outcomes through the use of a number of 'dots'. For example, increasing the number of 'dots' against a specific area indicates the importance of the area to the Commonwealth. To determine the APS as a percentage, compare the total number of 'dots' against the possible total of 'dots'. Figure 6 illustrates a Visual Payment Curve:

Dining Facility Performance Measure						
Quality of Meal	●	●	●	●	○	○
Timeliness of Meal	●	●	●	○		
Quality of Service	●	●	●			
Cleanliness of dining area	●	●	○	○		
Total = 12/17 = 71% Adjusted Performance						

Figure 6: Visual Payment Curve

Payment Curve Gate

Where there is a critical requirement, typically safety or by law it is possible to include a 'gate' in the calculation of the APS. Contracts that include these features are sometimes referred to as a 'safety before profit' contract.

The Payment Curve Gate works by including a specific modification to the APS when specific circumstances or events occur. This modification could include setting the APS to 0% regardless of the actual APS based on the Achieved Performance. Mathematically this is represented by the following equation:

$APS_{FINAL} = APS_{Payment\ Curve} \times Gate$

Where

APS_{FINAL} is the modified APS

$APS_{Payment\ Curve}$ is the initial APS calculated using the Achieved Performance and Payment Curve

Gate = 1 or 0 based on the occurrence of a defined significant circumstance(s) or event(s)

An example of the use of a Payment Curve Gate is in the contract for dining services (e.g. delivery of meals, etc.). Using the Visual Payment curve in Figure 6 let's consider that there is a Payment Curve Gate that reflects whether there are any proven cases of Food Poisoning (by a statutory authority such as a Food Safety Board). If this were the case, then regardless of the APS scored in Figure 6 (i.e. $APS_{Payment\ Curve}$ = 71%) the final APS would be 0% (i.e. APS_{FINAL} = 0%).

However, Payment Curve Gates need to be used with extreme caution as they could lead to times where it has been triggered resulting in an APS of 0% for the Review Period. While from a process perspective this is achievable, what motivation does the Contractor now have to continue to deliver performance to the Required Performance Level since there is no benefit to them? If you consider using a Payment Curve Gate this situation needs to be addressed.