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Risk-Adjusted Performance Measures

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7.1 Introduction

The measurement of performance is of paramount importance to credit risk management, especially in retail credit risk management where the sheer number of decisions needs to be thoroughly controlled via a standardized approach and a consistent framework. The high number of counterparties and decisions to be made calls for definite and possibly automated decision criteria and for ex post evaluation procedures concerning the rationality of the allocation of the limited capital available for the best investment alternatives on the basis of their expected (perceived) risk and return.

Risk-adjusted performance measures (RAPM) share the objective of gauging the true value added by each decision to grant credit, and is subsumed in the question of whether the capital assigned to a given transaction produces returns higher than the overall cost of the capital itself. There are two main possible uses for RAPM: to investigate the true profitability of the given business of the bank, and to serve as a measure of the Management by Objectives (MBO) framework.¹

With reference to the first objective, a correct decision process by the top management implies that a correct measure of the expected value added by each decision is taken into account. Without factoring in the risk incurred by the bank with each decision it would be vastly incorrect to judge the profitability of the decision itself. Hence the need for a measure that encompasses both return and risk. Given the risk preference of the bank, the top management with the aid of RAPM can select which businesses to expand and which businesses to contract or eliminate because of the different levels of comparative risk-adjusted profitability.
With reference to the second objective, the decision process and its implementation should greatly benefit from some form of decentralization. In that case, each decision made at the periphery might create or destroy value for the bank, and the subjects who make these decisions have to be rewarded for their results. A correct metric for rewarding the performance of a given organizational unit has to take into account both the return generated by that unit and the risks that the same unit has incurred on behalf of the bank.

As this chapter shows, not all of the measures produce the same results for the different purposes, especially with reference to the second set of objectives. Different measures can produce different results and thus promote different (and sometimes not equally desirable) behaviors in the individuals who have to comply with the measures.

### 7.2 Basic risk-adjusted performance measures

The first set of RAPM can be developed on the basis of the net return and on the assets or, better, on the risk-weighted assets involved in a given credit decision (for example with the annualized return on assets – AROA – or the annualized return on risk-weighted assets – AROWA).

The AROA is defined by the following ratio:

\[
AROA = \frac{\text{Average Annual Profit after Tax}}{\text{Average Asset Value over Lifetime}}
\]  

(7.1)

The average annual profit after tax in (1) is defined as the interest income plus the non-interest income, minus the cost of funding, impairment, and operational costs, that equals the profit before taxes. Subtracting the profit before taxes we get the profit after taxes of a given credit transaction. On multiannual credit operations, an average annual measure is normally used in order to smooth the effects of the possibly uneven distribution of income.

As for the denominator of (1), the average asset value over the lifetime is defined as the average value of the credit operation over its entire lifetime, which is particularly important for amortizing loans such as revolving credit cards or mortgage loans.\(^2\)

The AROWA is defined by the following ratio:

\[
AROWA = \frac{\text{Average Annual Profit after Tax}}{\text{Average Annual Risk-Weighted Assets}}
\]  

(7.2)

where the numerator has the same meaning as in (1) and the denominator is given by the risk-weighted assets following the Basel regulatory