4.4.6. Control of time

Scheduled and Performed Work

The project progress may also be analysed using S curves. Figure 1 shows the following set:

- The scheduled cost curve;
- The budgeted cost curve. This curve seldom overlaps the scheduled cost curve for the simple reason that the project may not follow as forecasted;
- The expenditure curve representing the actual costs of works performed.

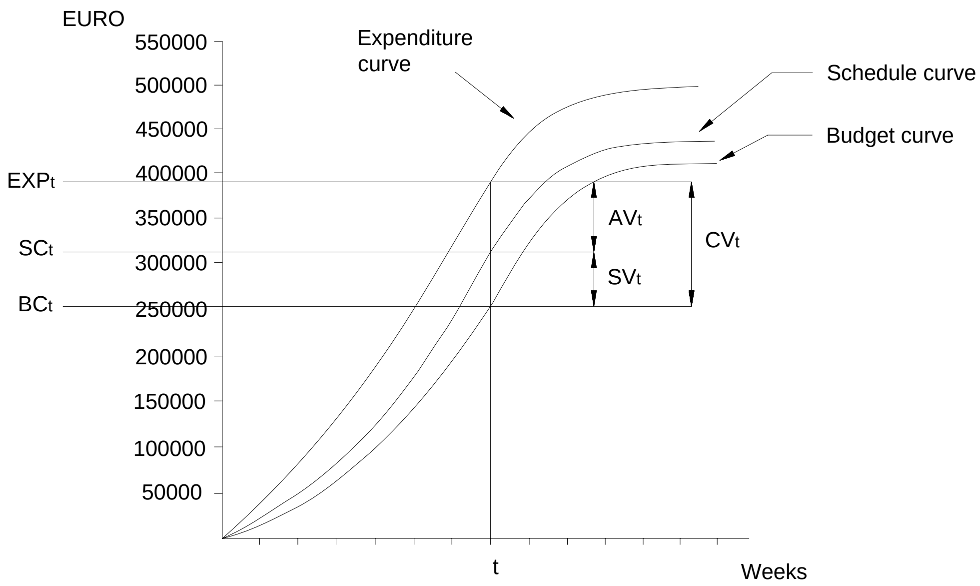

Figure 1: Project cost and schedule progress appraisal using variances.

Cash Flow analysis

For cash flow analysis, expenditures are indicated as negative and receipts from the client as positive. Therefore, the negative figure of cash-flow in a given month means that forecasted expenditures are greater than payments from the client on that month.

Negative cash flow shows the contractor financing requirements of the project. This can be done either through borrowed finance or through the contractor's own capital. In either case, the payment of interest rates may have to be considered in project expenditure flow, and this may influence the profit margin of the contract.

Most construction projects are not self-financing from the start, this involving some entrance of money from the contractors in order to compensate negative cash flows. The behaviour of the cash flow curve may otherwise be influenced by a number of factors:

- Profit margins: the profit amount and its distribution among the works to be performed may allow for earlier profits, thus decreasing the need for money external to the project;
- Over valuation: this has the effect of improving cash flows at the beginning but it may lead to shortage of money later on;
- Advance payments: the client may accept to make some advances on the project bill thus allowing the contractor to finance expenditures;
- Period of payments: the client may accept to pay provisional amounts thus reducing the traditional monthly payment periods;
- Delay in receipt of payments: longer delays between valuation and receipt from the client will extend the negative cash flow longer;
- Retentions: The more the retention the greater the delay in its release the worse will be the cash flow;

Delays in making payments: the greater the time between receiving goods or services and paying for them, the better will be the cash flow.