I.   Efficiently Variance Report Introduction

According to the Efficiently Variance report (hereafter refer to as EV), we can find that there is something wrong with the material consumptions on the production order.

The EV is a part of the production result that is created by differences between the estimated and the actually used material qty's and hours. The EV shows how efficiently materials and resources are used. The EV is always calculated by work center/cost component combination. BaanERP calculates the efficiency variance as follows:

Efficiency Variance = (estimated quantity - actual quantity) * estimated price

Let us take a look at the below table as a part of EV report:

Trans.Time	Seq.No.	Order	Pos.	C.C.	Wrh	Project	Item	Amount USD	
Transaction Origin : Production									
Financial Transaction: Efficiency Variance									
Transaction Date : 23122008									
13:00:43	1	139I03316	0	1			JNT-760-010591	0.84 C	
13:00:43	1	139I03316	0	1			JNT-760-010591	0.84 D	
13:00:43	2	139I03492	0	1			ETN-1025956	1,021.63 C	
13:00:43	2	139I03492	0	1			ETN-1025956	1,021.63 D	

shajeliu:
Credit: 0.84
Debit: 0.84

The production order WOI03316, which has been closed on 23-12-08, has a positive EV here. We can go to the order detail to look out why there is an EV happened.

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From this session, we can find that there is an item JNT-7602928 remains variance between the Estimated Qty and Actual Qty.

As the formula mentioned before, we can calculate the EV of item JNT-760-010591 as:

EV = (2.5-1.5) * 0.836972

$\quad$ ≈0.84

(Noted that there is only one item having variance, otherwise you need to make a sum of them.)

This result is the same as the report we generated before.

II.   The Reason of EV Happen

Efficiency Variance = (estimated quantity - actual quantity) * estimated price

EV= (EQ- AQ)* EP

For the reason of EV, we can list a simple one as below:

If   EQ=AQ   Then   EV=0

Idealistically, we think the dosage in BOM should be accurately input into the system, but unfortunately we can not achieve that target. Even so, we still treat this situation as a standard level under which the EV should be 0 because there is no variance between the Estimated Qty (BOM Dosage) and Actual Qty (Issued Qty).

PS:

When the system does backflush for material consumptions, if there is no shortage on the WIP WHS, and the qty we really used is equal to the qty of BOM setup (no scrap, no exceeded issuing), there will be 0 EV happened.

If EQ>AQ   Then   EV>0

This situation often happens when there is system shortage in the WIP (the FG produced, but no sufficient materials transferred into WIP advance). However, also take wrong BOM dosage into account.

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Example:

Assumed there were two orders for production line, one is for producing Semi-FG, and the other is for producing FG. As we know, only we carry out the SFG and report complete into SFG warehouse, the picklist of FG production order can be generated without shortage and the system will transfer the SFG into WIP for producing Finished Goods when picklist released. However, the problem we are facing is that operator in the production line did not report SFG into SFG whs in the system sometimes, but carried physical goods to produce FG to next step directly, so, you can see that the finished goods can be made out but no enough materials to be backflushed in the WIP in the system.

So we call this backflush shortage, actually, it's not a physical shortage.

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For the chart below, there are positive correlation inside:

Efficiency Variance

Backflush Shortage Line

	12/8	12/9	12/10	12/11	12/12	12/15	12/16	12/17	12/18	12/19	12/22	12/23	12/24	12/25	12/26	12/27	12/28	12/29	12/30
Total	109	325	103	94	31	31	351	399	132	57	123								