

## Esempio: $A=B+E$ , $C=B+F$

Possiamo evitare stalli riordinando le istruzioni MA bisogna mantenere la stessa semantica

lw	\$t1,	0 (\$t0)	IF	ID	EX	MM	WB	
lw	\$t2,	4 (\$t0)	IF	ID	EX	MM	WB	
add	\$t3,	\$t1, \$t2	→	IF	ID	EX	MM	WB (1 stallo)
sw	\$t3,	12 (\$t0)		IF	ID	EX	MM	WB
lw	\$t4,	8 (\$t0)		IF	ID	EX	MM	WB
add	\$t5,	\$t1, \$t4	→	IF	ID	EX	MM	WB (1 stallo)
sw	\$t5,	16 (\$t0)		IF	ID	EX	MM	WB

lw	\$t1,	0 (\$t0)	IF	ID	EX	MM	WB	
lw	\$t2,	4 (\$t0)	IF	ID	EX	MM	WB	
lw	\$t4,	8 (\$t0)	IF	ID	EX	MM	WB	
add	\$t3,	\$t1, \$t2	IF	ID	EX	MM	WB	
sw	\$t3,	12 (\$t0)	IF	ID	EX	MM	WB	
add	\$t5,	\$t1, \$t4	IF	ID	EX	MM	WB	
sw	\$t5,	16 (\$t0)	IF	ID	EX	MM	WB	(2 di meno)

*Handwritten red annotations:* A red circle around the MM stage of the third instruction (lw \$t4). A red arrow points from this circle to the EX stage of the fourth instruction (add \$t3). Another red arrow points from the EX stage of the fourth instruction to the EX stage of the sixth instruction (add \$t5).

