$price : \mathbb{N}$

VMSTATE

$stock, takings : \mathbb{N}$

VM_operation

$\Delta VMSTATE$
$cash\_tendered?, cash\_refunded! : \mathbb{N}$
$bars\_delivered! : \mathbb{N}$

exact_cash

$cash\_tendered? : \mathbb{N}$

$cash\_tendered? = price$

insufficient_cash

$cash\_tendered? : \mathbb{N}$

$cash\_tendered? < price$

some_stock

$stock : \mathbb{N}$

$stock > 0$

VM_sale

$VM\_operation$

$stock' = stock - 1$
$bars\_delivered! = 1$
$cash\_refunded! = cash\_tendered? - price$
$takings' = takings + price$

VM_nosale

$VM\_operation$

$stock' = stock$
$bars\_delivered! = 0$
$cash\_refunded! = cash\_tendered?$
$takings' = takings$

$VM1 \mathrel{\widehat{=}} exact\_cash \wedge some\_stock \wedge VM\_sale$

$VM2 \mathrel{\widehat{=}} insufficient\_cash \wedge VM\_nosale$

$VM3 \mathrel{\widehat{=}} VM1 \vee VM2$