Set theory proof that newly opened shorts and longs can not be compared with only knowing buy volume, sell volume, open interest

Set relationships:

$\{X1,Y1,F1,Z1,X',Y',F',Z'\} \in N$

$A = \{X1,Z1,F',Z'\}$
$B = \{Y1,F1,X',Y'\}$
$O = \{X1,Y1,X',Y'\}$
$C = \{F1,Z1,F',Z'\}$
$X = \{X1+X'\}$
$Y = \{Y1+Y'\}$
$Z = \{Z1+Z'\}$
$F = \{F1+F'\}$

$(X+Z)-(F+Y) = 0$

$X1 \in A, X' \in B$
$Y1 \in B, Y' \in A$
$X1, Y' \in A \cap O$
$Y1, X' \in B \cap O$
$\{X1, X'\} \subseteq A \cup B$
$\{Y1, Y'\} \subseteq B \cup A$

1. Method
$\{X1,X'\} : \{Y1,Y'\} = \{A+B\} : \{B+A\}$

2. Method
$X1 : F1 = (O+A) : (C+B)$
$Y1 : Z1 = (O+B) : (C+A)$
$X' : F' = (O+B) : (C+A)$
$Y' : Z' = (O+A) : (C+B)$

$X:F \to [(O+A)+(O+B)] : [(C+B) + (C+A)]$
$Y:Z \to [(O+B)+(O+A)] : [(C+A) + (C+B)]$

$\{[(O+A) + (O+B)] : [(C+B) + (C+A)]\} = \{[(O+B) + (O+A)] : [(C+A) + (C+B)]\}$

$\Rightarrow \{[A+B] : [A+B+C]\} = \{[A + B] : [A+B+C]\}$

Conclusion, with knowing this amount of information, you will always get to commutative state where more independent relationships between unknowns are needed.

So if more independent relationships are needed, we must introduce something that will hopefully set relationships between, X Y Z F sets. Binance API provides three such things that might come in handy (at least for better educated guess comprehension).
The three things are:

- Long/Short ratio - of all Binance accounts every account with position on gets "one vote" - net short/long
- Long/Short ratio *top traders* - "filtered long/short ratio" to the 20% of accounts with highest account balance
- Long/Short ratio *top traders* positions. - net long `div` net short amount of the 20% of account with the highest

- account balance