SIMCON – Ownership above threshold at all levels

T-rank AS

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1   Introduction

Ownership above a threshold at all levels is an approach used in some countries to establish Beneficial Ownership. Typically, a threshold of 10% or 25% is used. By setting the threshold to 50%, the approach may also be used to establish traditional control – if you own more than 50% at each level in an ownership chain, you will usually be considered to control all intermediary companies, as well as the final company.

At first glance, establishing whether someone owns above a threshold at all levels may seem almost trivial. There are, however, pitfalls and some not so obvious situations.

T-rank has developed a proprietary algorithm that will identify all owners having an ownership above a threshold at all levels in a company, regardless of how the ownership has been organized. The algorithm has been named *Simcon* (short for Simpel Control).

2   Simcon

The output of Simcon is best explained through an example illustrating how the algorithm deals with various complicated situations.
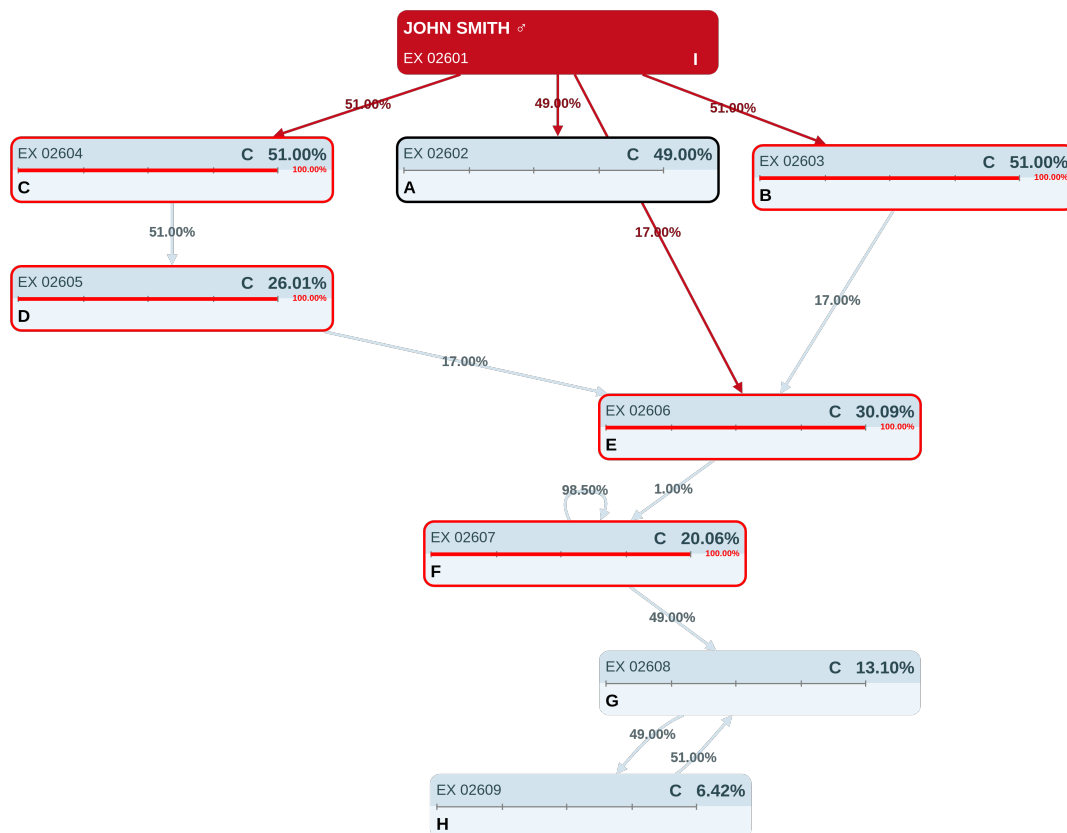
In the figure, we have a natural person, Mr. John Smith, who directly and indirectly has ownership in a number of companies. The arrows, with labels, illustrate direct shareholdings, while the figures inside the company nodes represent integrated ownership.

The question we want to answer is: Which companies does John Smith control? To solve the problem, we will be using Simcon with a threshold of 50%.

We start at the top of the ownership chain. John Smith has above 50% ownership in the companies B and C, but below 50% in the company A. Let S denote the set of entities that John Smith controls. Since we by definition could say that John Smith controls himself, we have so far established that $S \supseteq \{"John\ Smith", B, C\}$.

In any control settings, it does not matter whether you own shares directly in a company of interest, or you control one or more entities owning shares in the company. When we are looking for further companies to include in our set S, we therefor must sum the shares owned by the entities already included in S.

We start by looking at D. It is owned by more than 50% by company C, which is a member of S. D is therefor also a member of S.

E has no owner above threshold. However, if we sum the ownership of all members of S, we get 51% which is above threshold. E is therefor also a member of S. So far, we have found that $S \supseteq \{"John\ Smith", B, C, D, E\}$

The only candidate next is F. The sum of ownership in F, by the companies in S, is 1%, far below the threshold. However, F owns itself by 98.5%. That means that only 1.5% is available for other shareholders, and that these shareholders pro rata owns the 98.5% self owned shares. The ownership of E in F should therefor be considered as 66.67% (which here is identical to the integrated ownership E has in F). We conclude that F also is a member of S.

We then get a new candidate – G. The sum of shares in G, held by the companies in S, is 49%. We are under the threshold, but again, the target company has self ownership – this time indirect. G's self ownership is $49\% \times 51\% = 24.99\%$, meaning that the integrated ownership F has in G is (49 out of (100.00-24.99))% = 65.32%. In this case, the direct ownership link we are looking at is the sole contributor of this integrated ownership, and F, being an outsider of the Strongly Connected Component $\{G, H\}$, should be considered to control 65.32% of the votes in G.

Finally, there is only one candidate left - H. Again, there is a 49% link, and again, there is a 24.99% self ownership in the owned company. However, this self ownership is induced by the link we are looking at, and self ownership induced by ourselves should not be adjusted for. We conclude that H is not part of S.

We have found the final set of entities controled by Mr. Smith:

$$S = \{"John\ Smith", B, C, D, E, F, G\}$$

3   Final remarks

The approach discussed here is sometimes referred to as the *bottom-up approach*. This is not a descriptive name, as control in general flows *top-down*. In T-rank, we sometimes refer to the approach as the *recursive approach*, based on the fact that we start by identifying companies controlled by someone, then find all companies controlled by this initial set of companies, and so on, until we don't find any more companies.

As discussed in the previous chapter, direct and indirect self ownership should be taken into account. If a person owns a company by 2%, and the company owns itself by 98%, the person should obviously be looked at as a controlling owner, regardless of threshold. Justifying ownership for self ownership is not in general trivial. If the integrated ownership for the whole ownership graph has been calculated, the following formula can be used:

$$J_{A \to B} = \frac{O_{A \to B}}{(1 - (I_{B \to B} - I_{B \to A} \times O_{A \to B}))} \tag{1}$$

where $J_{X \to Y}$ is X's justified ownership in Y, $O_{X \to Y}$ is X's direct ownership in B and $I_{X \to Y}$ is X's integrated ownership in Y.