Algorithm 1 Randomize matrix with given column-sums u and row-sums s

Require: s is vector
Require: u is vector

declare empty matrix to store the results: $\boldsymbol{T'} \leftarrow \left.\begin{array}{|c|c|c|} \hline 0 & \dots & 0 \\ \hline \vdots & \ddots & \vdots \\ \hline 0 & \dots & 0 \\ \hline \end{array}\right\} length(s)$

$\underbrace{\qquad\qquad}_{length(u)}$

$\boldsymbol{s'} \leftarrow \boldsymbol{s}$
begin with country $j \leftarrow 1$
for $i =$ industries in random order **do**
  $u' \leftarrow u[i]$
  while industry i still requires supply **do**
    if supply of country $j \leq$ use of industry i **then**
      entire supply of j is allocated to i: $T'[j, i] \leftarrow s'[j]$
      remaining need of i is updated: $u' \leftarrow u' - s'[j]$
      go to next country: $j \leftarrow j + 1$
    else
      industry i gets entire imported input from country j: $T'[j, i] \leftarrow u'$
      remaining supply of country j is updated: $s'[j] \leftarrow s'[j] - u'$
      industry i got its entire imported inputs: $u' \leftarrow 0$
    end if
  end while
end for
return $\boldsymbol{T'}$