**A) M7.R1 — How & where to change the weights**

**Where the weights live now**

* File: src/terra\_nova/modules/m7\_optimizer/runner.py  
  Look for a block like:

DEFAULT\_WEIGHTS = {

"valuation\_cap": 0.25, # lower cap = higher score (we invert internally)

"discount\_pct": 0.20, # higher discount -> higher score

"revshare\_pct": -0.10, # larger revshare hurts score (negative weight)

"irr\_floor\_pct": -0.25, # higher IRR floor hurts score (negative weight)

"exit\_refi\_multiple": -0.20 # higher buyout multiple hurts score (negative weight)

}

**Three ways to override (pick one):**

1. **Environment variable (quickest, no file edits):**

PowerShell example:

$env:M7\_WEIGHTS = '{"valuation\_cap":0.20,"discount\_pct":0.25,"revshare\_pct":-0.15,"irr\_floor\_pct":-0.25,"exit\_refi\_multiple":-0.15}'

.\.venv\Scripts\python.exe -c "from terra\_nova.modules.m7\_optimizer.runner import run\_m7\_r1; run\_m7\_r1(r'.\InputPack\TerraNova\_Input\_Pack\_v10\_0.xlsx', r'.\outputs', currency='NAD')"

1. **Point to a JSON file (keeps changes version‑controlled):**

@'

{

"valuation\_cap": 0.20,

"discount\_pct": 0.25,

"revshare\_pct": -0.15,

"irr\_floor\_pct": -0.25,

"exit\_refi\_multiple": -0.15

}

'@ | Set-Content .\docs\m7\_weights.json

$env:M7\_WEIGHTS\_FILE = "C:\TerraNova\docs\m7\_weights.json"

.\.venv\Scripts\python.exe -c "from terra\_nova.modules.m7\_optimizer.runner import run\_m7\_r1; run\_m7\_r1(r'.\InputPack\TerraNova\_Input\_Pack\_v10\_0.xlsx', r'.\outputs', currency='NAD')"

1. **Edit the constant in code** (least flexible, but explicit):  
   Change DEFAULT\_WEIGHTS in runner.py, commit, re‑run.

**Where to see what was applied**  
Every run writes outputs\m7\_r1\_debug.json with the **effective** weights used and the normalized factor values. That file is the Auditor’s source of truth.

**Why we do weights (vs. “hard” constraints) now**  
Weights let you rank the 6 offers without changing farm or senior debt assumptions. “Hard” constraints (e.g., “exit multiple ≤ 1.1” or “IRR floor ≤ 15%”) belong to a later pass (what we called **M7.R2**) or when we wire full cash waterfall logic. For today, keep it simple: adjust weights to reflect your preference and re‑rank.