UNIT 2 · WHAT'S WRONG AND WHAT TO MEASURE

What a Correct Theory Must Deliver

Session 8 · The checklist GE-LAV must satisfy

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Primary Text: Liquidity Illusion (Forthcoming, 2026)

Graduate Finance Course · Spring 2027 · Session 8 of 32

What we'll cover today

1. **Pre-conditions**
   What we've established so far
2. **Theoretical requirements**
   Three properties any replacement must have
3. **Empirical requirements**
   Five empirical tests
4. **Practical requirements**
   Implementation feasibility
5. **How GE-LAV measures up**
   Preview of how it satisfies the list

Pre-conditions: where we stand

After 7 sessions, we have established:

✓ **DCF systematically misvalues private capital**

Confirmed by secondary market evidence — $73M gap on a $103M asset (S1)

✓ **Three structural failures of DCF**

Stochastic premium, Jensen bias, McKean-Vlasov externality (S2)

✓ **Liquidity illusion is the gap that GE-LAV must close**

DCF marks vs. secondary clearing prices differ by 5-50% (S3)

✓ **OU process is the mathematically appropriate model for L(t)**

Mean reversion + Brownian shocks → bounded variance (S4)

✓ **Premium has term structure π(L, T)**

Two-dimensional dependence: state AND horizon (S5)

✓ **IRR is biased; PME is partial; both ignore liquidity**

Why we need GE-LAV-consistent metrics (S6-7)

Theoretical requirements

REQ 1

General equilibrium

Must price in a market-clearing framework where supply equals demand for liquidity. Partial equilibrium analyses (LA-CAPM) are insufficient.

→ Session 17: GE Market Clearing

REQ 2

Collective dynamics

Must capture the McKean-Vlasov externality: individual decisions affect the collective state. Standard SDE models do not.

→ Session 21: MFG Equilibrium

REQ 3

Strict nesting of existing theories

Must reduce to DCF when premium is constant, to LAV when partial equilibrium. Should not invalidate existing tools, but extend them.

→ Section 4.5 of the book

Empirical requirements: five tests

Any candidate theory must pass these tests against historical data (2003–2024):

Test 1: Term structure recovery	Recover empirical regime-dependent π(L, T) from secondary market data.
Test 2: Jensen bias calibration	Predicted Jensen bias = 0.8–3.6% should match observed return alpha across asset classes.
Test 3: Crisis amplification	Predict GFC-era valuation gap of 4.31× DCF vs. GE-LAV at L = -1.5.
Test 4: Welfare gap quantification	Predict ~$300B/yr aggregate welfare loss across the $13T market.
Test 5: Out-of-sample prediction	Calibrated GE-LAV must successfully predict 2020 COVID shock and 2022 rate shock magnitudes.

How GE-LAV measures up: a scorecard preview

Foreshadowing — by Session 24, you'll have computed all of these:

Requirement	GE-LAV result	Session covered
General equilibrium framework	✓ Yes	Session 17
McKean-Vlasov collective dynamics	✓ Yes	Session 21
Reduces to DCF when premium constant	✓ Yes (proved)	Section 4.5 (book)
Recovers empirical π(L, T)	✓ 0.94 R^2	Session 17
Predicts Jensen bias by asset class	✓ 0.8 – 3.6%	Session 24
Predicts GFC amplification	✓ 4.31×	Session 16
Quantifies welfare gap	✓ 2.3%/yr · $300B	Session 24
Out-of-sample (COVID, 2022)	✓ Within ±20%	Session 16 + 19

Why a checklist? The role of a 'correct theory'

Without a checklist, debate is endless.

Status quo

DCF/CAPM has known defects but is the default · path-dependence

What we need

A clear set of requirements that a replacement theory must meet

Source of the list

Synthesis of 50 years of empirical and theoretical findings

Use

When evaluating any framework (GE-LAV, others), apply this 8-element list

Course thesis

GE-LAV meets all 8; we'll verify this through Sessions 9-31

Reading

Book Ch. 8 (full elaboration with citations)

Session 8 summary

What we accomplished today

1. Unit 1 has built the diagnostic case: DCF fails, secondary market shows it, OU models L(t), term structure exists
2. Three theoretical requirements: GE, collective dynamics, strict nesting
3. Five empirical tests: term structure, Jensen bias, crisis amplification, welfare gap, out-of-sample
4. GE-LAV passes all eight by Session 24 — Unit 2 begins the construction

Next session

Session 9: Midterm review · Session 10: Midterm exam

The 8-element checklist

Each element addresses a specific defect of DCF or a real-world feature it ignores.

#	Requirement	Defect addressed
1	General equilibrium framework	DCF is partial: doesn't internalize feedback
2	McKean-Vlasov collective dynamics	DCF treats agents as isolated
3	Reduces to DCF when π is constant	Backwards compatibility
4	Recovers empirical π(L,T)	DCF can't match secondary market data
5	Predicts Jensen bias by class	DCF ignores convex discount factor
6	Predicts GFC amplification	DCF flat in crisis; market shows 4× amplification
7	Quantifies welfare gap	DCF can't identify the regulatory question
8	Out-of-sample validation	Theory must be falsifiable

Element 1: general equilibrium framework

Why partial equilibrium isn't enough.

DCF approach

Take the price as given; discount the cash flows

Issue

When LP A sells, the price changes (especially in stress)

GE approach

Solve simultaneously: prices clear supply and demand

Test

Does the framework explain post-2008 secondary discount widening?

Verdict for GE-LAV

✓ Yes — solved in Session 17, market-clearing condition

Why it matters

Pension fund sell-side decisions are not price-takers in stress

Element 2: McKean-Vlasov collective dynamics

Why every LP-state distribution drives the prices everyone faces.

DCF approach

Each LP's discount rate is fixed for that LP

Issue

Empirically: when many LPs are stressed simultaneously, prices crash for all

MFG approach

Each LP's optimal policy depends on the distribution of others' states

Test

Does the framework predict crisis amplification (4.31×)?

Verdict for GE-LAV

✓ Yes — full MFG specification in Sessions 21, 26

Why it matters

DCF in crisis is wrong by orders of magnitude

Element 3: reduces to DCF when π is constant

Backwards compatibility — a sanity check.

Test

Set $\sigma_L = 0$ and $\bar{L}$ = constant. Does GE-LAV → DCF?

Verdict

✓ Yes — Theorem 5.1 (valuation hierarchy proved Session 30)

Implication

GE-LAV is a strict refinement of DCF, not a different framework

Conservative case

In normal markets (L~0, σ_L small), GE-LAV ≈ DCF

Important

Theorem doesn't say GE-LAV converges to DCF in finite time; just π=constant limit

Practical

Practitioners can adopt GE-LAV without breaking DCF spreadsheets

Elements 4-6: empirical fits

Quantitative predictions GE-LAV must match.

Element	Empirical target	GE-LAV result	Pass?
4. π(L,T) fit	$R^2 > 0.85$ on Lazard secondary data	$R^2 = 0.94$	✓
5. Jensen bias by class	Buyout 1.6%, VC 3.6%	Buyout 1.5%, VC 3.6%	✓
6. GFC amplification	Observed 4.0-4.5×	Predicted 4.31×	✓
7. Welfare gap	Plausibly $200-400B/yr	$300B/yr	✓
8. Out-of-sample (COVID)	Predictions within ±20% bands	Within ±15%	✓

All 8 elements verified — GE-LAV passes the checklist.

Elements 7-8: welfare and falsifiability

The most demanding requirements.

Element 7: welfare gap

Quantify the social cost in dollars/yr

GE-LAV answer

$300B/yr at $13T global AUM (2.3%/yr × $13T)

Element 8: falsifiability

Predictions must be specific enough to fail

GE-LAV out-of-sample

Predicted COVID stress dynamics within ±20% (March-Sept 2020)

Falsifiability achieved

If 2025 stress shows uncoupled dynamics → GE-LAV wrong

Practical implication

Researchers can test in real-time as new data arrives

Bridge to Session 9: midterm review

Eight elements anchor everything we'll do.

If GE-LAV fails any element

Framework is wrong; need a different theory

Status by Session 32

All 8 elements verified; framework is complete

What this means

The course is internally consistent; you can trust derivations

Midterm preview

Session 9 will review Sessions 1-9 mechanics

Session 10

Midterm exam · 75 min · sessions 1-9 coverage

Final note

Memorize the 8 elements — they're testable on midterm