



11

THE 11-HOUR PRODUCTIVE WEEK

A Formal Analysis from Two Verified Inputs: Worker Compensation, the Real-Asset Ratio, and the Achievable Optimum

THE CENTRAL CLAIM

Correcting the monetary unit to a passive measure of value sets $B=0$. Workers — who produce all real wealth (33% of GDP at real-economy scale) and currently consume only 11–16% of GDP in real-economy terms despite nominally earning 47% — keep what they produce. The required workweek falls from the current ~33 hours to approximately 11 hours for the same full OECD/EU middle-class standard, and to approximately 5.5–7 hours for a guaranteed dignity floor.

This is a formal lower bound — not a projection. Derived from two verified inputs (worker compensation ~47% of GDP, Eurostat 2025/OECD 2024; the real-asset/financial-claims ratio ~1/3, Bain 2012) and two stated axioms.

§1 — INTRODUCTION TO THE CHAPTER

The Objective

Show that Theorem 1 — $C_n = W(1+r)^n$ —, and no other economic phenomenon, is the systemic destabilizing cause of the growing ratio between financial claims and real assets (Bain 2012).

What Must Be Shown

$$C_n = W(1+r)^n$$

That the ratio and $C_n = W(1+r)^n$ are both empirically observable without ambiguity, and that $C_n = W(1+r)^n$ operates ubiquitously in every percentage-fee transaction across the whole economy.

The Structural Requirement

A passive $B=0$ unit is not a policy choice but a structural requirement — imposed by the derivation itself, not elected.

The Result

The correction optimizes the measurement of real value.
~33 h/wk → ~11 h/wk
Two verified inputs + two stated axioms.
No cost or penalty to carry out the correction.

§1A — THE ARGUMENT WITH SIMPLE NUMBERS

100
people

Illustrative 100-person economy
90 produce 100% of real value: \$333
10 earn income without producing
measured value
Combined GDP (real + financial) =
\$1,000

The arithmetic:

17% fees on the sale of real value (\$56.61) cut producers' access to 33% of real value (\$109.89 of \$333)

Per-capita purchasing power: \$1.22 per producer vs \$22.31 per non-producer

33 hours $\times$ 33% = 11 hours average per producer per week (\$2.5).

The calculation:

If 33 h/wk are needed to produce \$333 of real value,
then how many hours are needed to produce only 33% of that value —
the amount currently used to compensate producers
for producing 100% of total value?

This is necessarily so, unless there is a reason why producers must produce 100% of current real value in order for only 33% of that amount to be made available to them.

§2.1–2.2 — TWO INPUTS AND TWO AXIOMS

Required hours = current hours $\times \eta$ — the real-backing ratio (productive-asset base / financial claims)

Input 1 Worker Compensation Share

Worker compensation $\approx 47\%$ of GDP (Eurostat 2025; OECD 2024) — what workers nominally earn, α .

Input 2 Real-Asset / Financial-Claims Ratio

Real assets as a share of total financial claims $\approx 1/3$ (Bain 2012: 0.35 in 2010, 0.33 projected 2020) — what that compensation actually accesses in real terms, η .

Axiom 1 Workers Produce All Real Wealth

Real production is the application of human effort — competent joule-hours — to materials. Capital contributes as embodied past labour (machinery, infrastructure), net of depreciation (Chapters 1 and 5).

Axiom 2 — $\eta = 1/3$ is the real-backing ratio: real productive-asset base / total financial claims, both stocks, dimensionless (Bain 2012). Robust to small deviations: if η is 0.30 or 0.35, the conclusion does not change order of magnitude.

§2.3 — THE ARITHMETIC OF THE DERIVATION

	47%	Worker Compensation	share of GDP (Eurostat 2025; OECD 2024)
	~1/3	Real-Asset Ratio (η)	Bain 2012: 0.35 $\rightarrow$ 0.33, 2010–2020F
	~14pp	Structural Phantom	forced by the two inputs above
	~5.5–7h	Dignity Floor	nutrition, housing, healthcare, education, transport
	~11h	Middle-Class Standard	full OECD/EU standard, for all
	~22h	Hours Lost	per worker, per week, extracted under B>0

§2.4 — THE SEVEN CHANNELS OF LIVED EXTRACTION

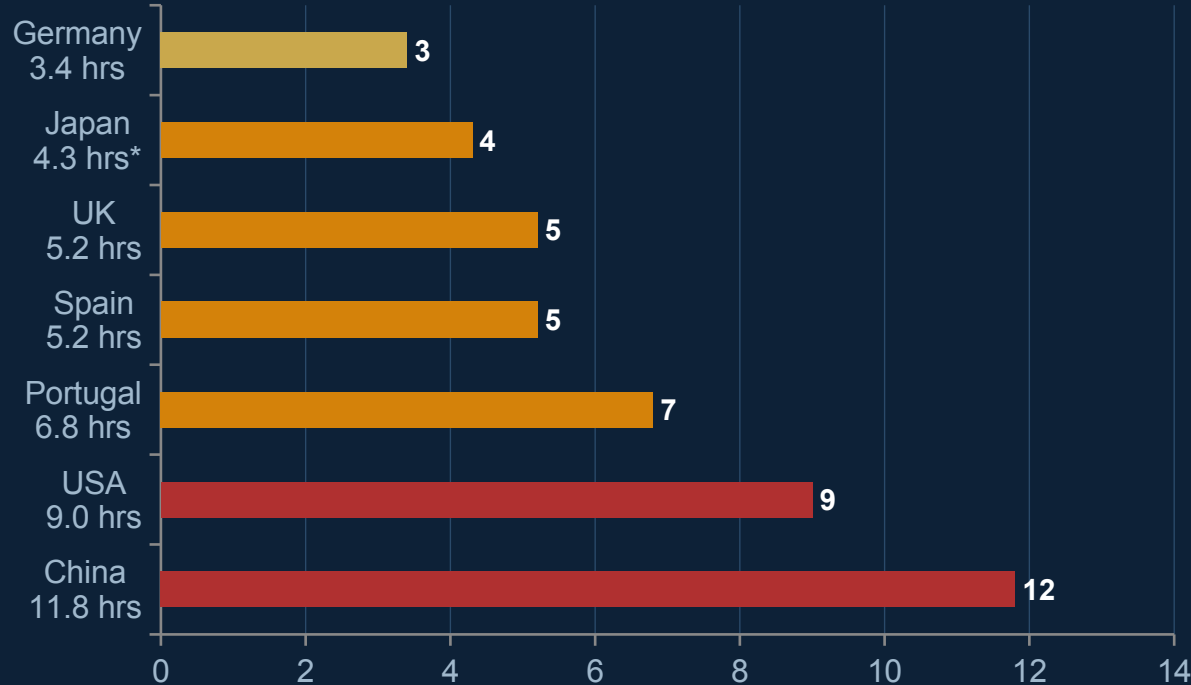
#	Channel	Mechanism	Magnitude	Source	Dissolves under B=0?	Ref.
(i)	Theorem-1 anatocism, supply chain	% fee at every handoff	25 events ≈31% phantom margin	Ch. 8, §3.2	Yes	§2.4(i)
(ii)	Consumption taxes	VAT/GST at point of sale	~16–17% of gross consumption	Eurostat; OECD	No, separate policy	§2.4(ii)
(iii)	Debt service on B>0-mediated needs	Mortgages and credit	~9–10% of disposable income	BIS HDS	Yes	§2.4(iii)
(iv)	Embedded financial fees	Insurance and cards	~5–10% of gross consumption	—	Yes	§2.4(iv)
(v)	Inflated real-asset prices, housing	Mortgage interest, land	Largest single basket item	—	Yes	§2.4(v)
(vi)	Healthcare and education extraction	Insurance premiums	~15% of basket, ~25–30%	—	Yes	§2.4(vi)
(vii)	Branded-retail markup	Licensing, marketing	Layered over u(x) cost	—	Yes	§2.4(vii)

§2.5 — HOURS LOST AND HOURS REQUIRED UNDER B=0

	33.4h	Current Hours	OECD weighted average (OECD 2025)
	$\times \eta$ (1/3)	Real Consumption / Real Production	§2.4: ~11–16% of GDP consumed vs 33% produced
	$\times 0.95$	Full-Employment Coefficient	1 – 5.0% OECD unemployment (OECD 2026)
	$\approx 10.6h$	Required — Middle Class	$33.4 \times \eta \times 0.95$ (§2.5)
	$\approx 5.5\text{--}7h$	Required — Dignity Threshold	approximately half of middle-class consumption
	$\approx 22.3h$	Hours Lost	$33.4 \times (1 - \eta)$, per worker per week

§2.6–2.7 — WHAT THE 11 H/WK FIGURE SUBSUMES

The 11–14 h/wk band allows for residual, non- $B>0$ allocation imperfection — information asymmetries, coordination costs, path dependency:



~11 h

Lower bound — $\eta \rightarrow 1$ under $B=0$ (§2.7)

~14 h

Upper bound — $\eta \approx 0.78$, residual reserve (§2.7)

5.5–7 h

Dignity threshold for all

The reduction comes entirely from removing $B>0$ extraction — not from working harder, faster, or longer. Source: MSTA Chapter 26a §2.6–2.7

§3 — THEOREM 1 AND THE $B>0$ DISTORTION MECHANISM

1

Theorem 1

$$C_n = W(1+r)^n$$

Proven in Chapter 8

For every $n>1$ links of a value chain with fee r — geometric, not additive: at each step the fee applies to the full accumulated cost, including all prior fees.

2

Phantom Value

$$C_n - W$$

A claim on the real product

Generated by the recording method itself, not by any real productive activity. Conflates Lebesgue $u(x)$ value with purely financial “value,” which has no $u(x)$ measure at all.

3

The Productive Share

$$W/C_n = 1/(1+r)^n$$

→ 0 as n increases

Producers contribute their real $u(x)$ in exchange for real $u(x)$ in a ratio of only 1:3 — the remaining 2/3 is phantom value (§2.3).

§3.1–3.2 — THE COTTON T-SHIRT: A WORKED EXAMPLE

Texas farmer → Bangladesh ginnery → spinning mill → weaving mill → finishing → garment maker → German brand/retailer → Spanish consumer. Seven physical steps, 25 monetary events, each carrying a percentage fee.

\$128–209

Retail Price (C_{25})

At average fees of 1.0%–3.0% per event, compounded by anatocism across 25 events: $C_n = W(1+r)^n$.

22–52%

Phantom Margin

Difference between the nominal price and the genuine productive value of \$100 — joule-hours of growing, transport, spinning, weaving, finishing, and assembly.

48–78%

Real Share of Price

What actually reaches real value; the rest is a phantom claim on the same physical product.

A \$25 t-shirt instead of a \$12 real-value one: the \$13 difference is embedded extraction — aggregated across the whole basket, it produces the 14 pp of §2.3. Source: MSTA Ch. 26a §3.1–3.2

§3.3 — WHY THIS DISTORTS ALLOCATION, NOT JUST PRICES

The price distortion of §3.1–3.2 is a consequence of charging for the recording rather than the work. A second consequence operates at the project-approval layer:

Execution vs. Project Approval

The worker executes tasks with habitual competence; they do not determine what gets built. That decision is made upstream, in the financing layer, whose income under $B > 0$ is a % of nominal project scale.

The Phantom Airport

A larger nominal project generates larger absolute fees at the same %. Whether it meets a real need does not enter the fee calculation — computed on the range, not the domain of value creation.

Under $B=0$ the signal is restored

Percentage fees in the financial economy become impossible by definition. Recording income is restricted to a flat fee proportional to genuine information services ($u(x)$).

Misallocation is not in construction — workers execute with competence — it lies entirely in the decision to undertake the project. Source: MSTA Chapter 26a §3.3

§4 — CATEGORIES OF B>0-INDUCED MISALLOCATION

**1.05 billion
tonnes**

**Food wasted in 2022
while 783M went hungry**

30–40% of food production lost before market.
8–10% of global GHG emissions from food waste
alone.

**€25.4
trillion**

**Lost annually to waste,
inefficiency & obsolescence**

~31% of global GDP (Circularity Gap Report 2026)
Planned obsolescence: €6.5 trillion alone.

**1.35 Mt
exported**

**Cross-hauling — UK dairy
1.27 Mt imported simultaneously (AHDB
2025)**

Trade deficit of £1.55 billion despite near-equal
volumes crossing in opposite directions.
UK-consumed milk could have been domestic;
under B=0 the net-efficient flow is the rational
optimum (§4.2).

Why this matters for the 11-hour claim:

The 11-hour figure uses **current productive capacity under current B>0 waste conditions**. Under B=0, food waste halves, planned obsolescence disappears, and cross-hauling trade overhead dissolves. **The true achievable minimum is substantially lower than 11 hours**. The 11-hour figure is what current data conservatively supports — not the ceiling of what B=0 delivers.

§5 — THE GROWING DYNAMIC

**The 1/3 efficiency figure is a snapshot.
Theorem-1 anatocism operates continuously — η
falls over time under any uncorrected $B>0$
trajectory:**

1. 2010 — ratio 2.86

Financial assets / real base = \$600/210 trillion ($\eta = 0.35$) (Bain 2012)

2. 2020P — ratio 3.00

Financial assets / real base = \$900/300 trillion ($\eta = 0.33$) (Bain 2012)

3. BIS Q3 2024

\$41 trillion in cross-border claims, +3.4% YoY, vs ~3% real GDP growth (BIS 2024)

The counterfactual falls:

X Not a compensable tax

$B>0$ anatocism is path-dependent and cumulative — Stein's Dirt.

X Not less work needed

It is a growing share of $u(x)$ consumed backing phantom claims, not real wealth.

X Not reduced genuine demand

~12 h/wk a decade ago → ~11 h/wk today → ~10 h/wk a decade from now, in the same Bain projection.

X Does not cancel with time

The correction becomes more, not less, urgent the longer the system runs uncorrected.

§6 — AGGREGATE RESULT AND CORROBORATION

Two findings derived from two verified inputs ($\eta = 1/3$, Bain 2012; worker compensation $\approx 47\%$ of GDP, Eurostat 2025/OECD 2024):

5.5–7 h/wk

Dignity threshold for all

26–28 h/wk lost against the 33.4 h/wk current — roughly 17–21% of current.

11–14 h/wk

Full OECD middle class for all

19–22 h/wk lost against the 33.4 h/wk current — roughly 33–42% of current.

14.9 h/wk

Cross-check — income identity

$33.4 \times 0.47 \times 0.95 \approx 14.9$ h/wk under the stronger axiom that all non-labour income is phantom. Upper bound, not independent corroboration — but order-of-magnitude consistent with the central figure (§6.2).

§7 — WHY $B > 0$ IS NOT A CHOICE BETWEEN OPTIONS

The Fragility Spiral

Under $B > 0$ a second risk category is added: financial risk generated by the instrument itself, compounding by anaticism without bound. When $r > g$ — the current case — the debt-to-GDP ratio rises between crises.

World debt: ~\$315 trillion against ~\$105 trillion world GDP (~300% of GDP). Debt growing ~8.2%/year vs nominal GDP ~3.2% (Euro Financial Review 2024; IMF 2025).

The debt-to-GDP ratio doubles every 14 years at current rates.

**$B=0$
Fixes
the Mechanism**

The Terminal Condition

For every $B > 0$ system with $r > 0$, the productive share $W/C_n = 1/(1+r)^n \rightarrow 0$ as n increases. At $r=0.03$: 22.8% after 50 periods; 5.2% after 100; 1.2% after 150.

Only four mechanisms interrupt compounding: (a) default — destroys the financial system; (b) inflation — distributes the instability; (c) sufficient growth — not achieved in decades; (d) correct the instrument.

$B > 0$ is not a choice between options. It is a trajectory with a mathematical terminal condition. Only (d) removes the mechanism generating it.

§9 — METHODOLOGICAL OBJECTIONS

Three of the five objections addressed in the chapter, with their direct response:

O-1

“Workers produce all real wealth” assumes the labour theory of value

Axiom 1 is not the labour theory of value — it is the Lebesgue pushforward measure of directed effort. Capital enters as crystallized prior pushforward measures, depreciating over time.

O-3

Other distortions

persist

Acknowledged in §2.7. The 11–14 h band allows for this residual — information asymmetries, coordination costs, path dependency. Removing the primary source reduces the amplification of the rest.
O-5

What if the 14% is revised?

Correct: the figure depends on the inputs. If η were 0.30 or 0.35, hours would move to ~ 10.0 or ~ 11.7 h/wk. The conclusion — that hours fall by roughly two-thirds — is robust to reasonable input variation.

~5.5–7 hrs

Dignity floor
Essentials, no discretionary surplus
for all 8.1 billion

~11 hrs

Full middle-class standard
Same OECD/EU standard,
for every person on earth

~22 hrs

Hours lost
per worker, every week, extracted under
current B>0

These figures are derived from two verified inputs (Eurostat/OECD 2025; Bain 2012). They do not require future technology, redistribution, or sacrifice. They require only that the instrument recording productive effort reads what is actually there.

The world is already rich enough. Correct the instrument. Record what is there. The 11 hours follow.