

The Day the Record Clears: Statutory Expiry of Criminal-Record Disclosure and Ex-Offenders' Return to Work

Bolero

Abstract

Registered research design and conditional interpretation policy; no outcomes observed.

Keywords: Pre-registration, research design

The Day the Record Clears: Statutory Expiry of Criminal-Record Disclosure and Ex-Offenders' Return to Work

Replication pre-registration: the source paper's results are known; no new replication outcomes have been observed.

Research question

Does scheduled expiry of disclosure on a Danish private criminal-record certificate change job-finding among previously convicted people?

Scope

Causal — but for exactly one registered quantity: the effect of reaching the statutory private-certificate clearing date on the employee job-finding hazard (pooled F+S+C), licensed solely by the confirmatory H1 discontinuity surviving both registered disconfirmation gates (the placebo-anniversary equivalence gate with its $\alpha=0.01$ screen per Amendment A2, and the arm-T never-disclosed kill gate, estimated placebo-first). The power-driven fixed-point demotion of H2, H3, and H3c to the exploratory tier NARROWS this ceiling relative to the original design: fine-grained attribution of the jump to certificate clearing specifically — as against residual disclosure-arm-specific timing institutions — is presented as strongly consistent with the gate structure

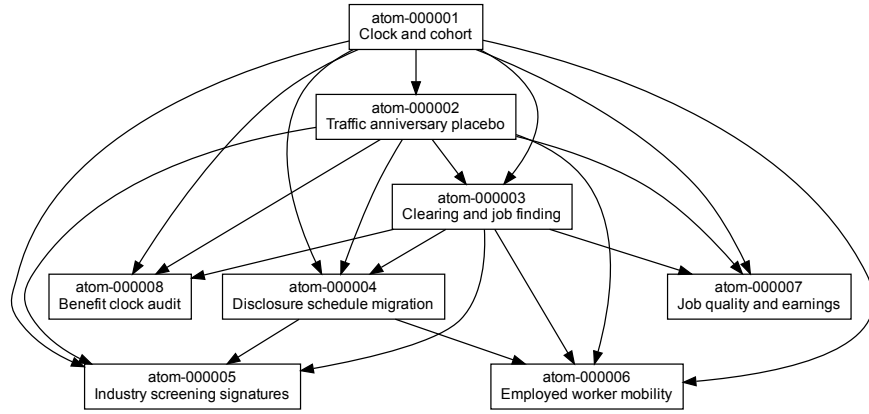


Fig. 1 Registered Atom dependencies

and the embedded 24/36/60-month cross-arm alignment, and is upgraded in prose by exploratory schedule-migration corroboration only with the explicit label that such corroboration is exploratory. Mechanism attribution to employer information sets is capped a further level down at consistent-with (worker-side awareness of the date is inseparable in principle and is apportioned, not excluded, via the exploratory H2/E4/E6 signature). No predictive or generality claims (Danish statutory certificate regime; employee jobs only). If either kill gate fires, the ceiling drops to associational/descriptive and the prose follows it down; exploratory results can never raise the ceiling.

Graph overview

Dependency edges summarize the graph, not unconditional activation. Exact logical conditions and all local outcomes follow below; the separate graph atlas shows each Atom's branches.

Registered storyline

The single study asks whether scheduled expiry of private-certificate disclosure changes employee job finding. Shared measurement validity first defines the admissible cohort and source-contingent F+S+C/F+S scope. The never-disclosed T battery is archived before H1. H1 then supplies main and F estimates needed for both post-estimation claim gates. Schedule migration and the industry/worker-search signatures are exploratory; job quality and the benefit-clock audit retain their independent descriptive content. All estimates, unfavorable and unavailable outcomes, and every registered member remain visible. No graph edge requires a main-relative placebo comparison before that main estimate exists.

Literature and public-source trace

Source conversion date: 2026-09-05. Historical source search date: 2026-08-21. The source recorded a limited OpenAlex/Crossref novelty search, including failed services; this converter does not claim a new exhaustive search or first-study status. The protocol’s sharper contribution concerns individual statutory event time and certificate disclosure, not first evidence on automatic clearing. All private text remained local; public queries below contain only public concepts/titles.

New public checks during conversion

Date	Exact query / action	Source and access result	Permitted support / limit
2026-09-05	site.politi.dk straffeattest afgørelser private straffeattest bøde betinget frakendelse	Search then opened https://politi.dk/straffeattest/afgørelser-paa-din-straffeattest ; accessible	Current guidance only, not historical Supporting heading quotation: “Færdselsloven - gælder attester udstedt efter 1. januar 2022”. Its traffic table leaves private-certificate cells blank for disqualification rows. This raises a source A3/legal- vintage concern; it does not authorize undoing A3.
2026-09-05	site.nber.org “Can You Erase the Mark of a Criminal Record”	https://www.nber.org/papers/w32394 search metadata retrieved; direct open returned403	working-paper identity W32394,2024,DOI10.3386/w32394 from index; no new numerical findings used and no full-text access claimed.

Date	Exact query / action	Source and access result	Permitted support / limit
2026-09-05	site.harvardlawreview.org “Expungement of Criminal Convictions”	https://harvardlawreview.org/publishing/online-133/expungement-of-criminal-convictions-an-empirical-study/ accessible	Publicizing/online-133 J.J.Prescott,Sonja B.Starr, vol133 issue8,June2020, p2460; supporting quotation: “June 2020”. Resolves bibliography display year only; inherited source2019 citation retained in audit. No empirical numbers imported.

The current police table lists the familiar criminal-code 2/3/5-year structure, but coverage and traffic rules are temporally qualified and source drugs/traffic coverage is not thereby verified. The source asks for historical executive orders and amendments2007-2020 and cohorts2009-2017 with follow-up beyond them; that review was not completed. No current webpage is used as a historical vintage table. No historical legal date range, offence list, sanction code meaning or final-instance rank was invented. No further primary legal lookup was necessary to faithfully record this unresolved gate.

Inherited search record (source claim, not rerun)

Source-preserved queries and access boundaries

date: 2026-08-21

queries: - expungement criminal record employment (OpenAlex works search)

- ban the box criminal record employment (OpenAlex works search)
- criminal record employment field experiment Sweden Norway (OpenAlex works search)
- straffeattest (OpenAlex works search)
- clean slate automatic record sealing employment (OpenAlex works search)
- criminal background check statistical discrimination hiring (OpenAlex works search)
- spent convictions disclosure rehabilitation offenders employment (OpenAlex works search)
- certificate of conduct criminal record screening Netherlands employment (OpenAlex works search)

- criminal record expiry expiration employment natural experiment (OpenAlex works search)
- Rovira criminal record cancellation labour market (OpenAlex works search)
- criminal record Denmark employment conviction register (Crossref works search)
- incarceration conviction employment Denmark register data (OpenAlex works search)
- politiattest criminal record certificate employment (OpenAlex works search; zero results)
- redemption time since arrest criminal background check Blumstein Nakamura (OpenAlex works search)
- BLOCKED-NOT-EXECUTED: Prescott Starr expungement employment outcomes Michigan set-aside study (WebSearch; session search budget exhausted)
- BLOCKED-NOT-EXECUTED: ban the box employment effects evaluation Agan Starr Doleac Hansen (WebSearch; session search budget exhausted)
- BLOCKED-NOT-EXECUTED: Prescott Starr expungement employment outcomes Michigan study (DuckDuckGo HTML; CAPTCHA wall)
- BLOCKED-NOT-EXECUTED: automatic record clearing clean slate employment (Semantic Scholar API; HTTP 429)

sources: - OpenAlex works API (api.openalex.org) - primary scholarly index actually searched

- Crossref works API (api.crossref.org)
- Semantic Scholar Graph API - attempted, rate-limited (HTTP 429), no results used
- DuckDuckGo HTML search - attempted, CAPTCHA-blocked, no results used
- WebSearch tool - attempted, session budget exhausted (200/200), no results used

nearest prior work: - **ref:** Prescott, J.J. & Starr, S.B. (2019). Expungement of Criminal Convictions: An Empirical Study.

why it differs: Studies petition-based Michigan set-asides where applicants self-select into expungement, whereas W5.4 exploits automatic, non-discretionary statutory clearing dates with no application margin.

- **ref:** Agan, A., Garin, A., Koustas, D., Mas, A. & Yang, C. (2024). Can You Erase the Mark of a Criminal Record? Labor Market Impacts of Criminal Record Remediation.

why it differs: US record remediation (clean-slate-style sealing/expungement) where clearing is typically not salient to the worker and there is no long-standing 2/3/5-year sanction-tier schedule, universal employer certificate regime, or never-disclosed offense-class placebo.

- **ref:** Onal, C. (2022). Effects of Automatic Criminal Record Expungements on Employment.

why it differs: Evaluates a US automatic-expungement policy reform rather than individual-specific, ex-ante-known statutory clearing dates within a stable certificate-disclosure regime.

- **ref:** Selbin, J., McCrary, J. & Epstein, J.M. (2018). Unmarked? Criminal Record Clearing and Employment Outcomes.
why it differs: Follows self-selected clients of a California record-clearing clinic (no quasi-random clearing date), so it cannot separate clearing effects from selection into seeking relief.
- **ref:** Agan, A. & Starr, S.B. (2017). Ban the Box, Criminal Records, and Racial Discrimination: A Field Experiment.
why it differs: Audit experiment on employer callbacks when record questions are removed from applications; information is delayed, not truthfully extinguished at a statutory date.
- **ref:** Doleac, J.L. & Hansen, B. (2019). The Unintended Consequences of ‘Ban the Box’: Statistical Discrimination and Employment Outcomes When Criminal Histories Are Hidden.
why it differs: Studies suppression of record questions at the application stage (inviting proxy-based statistical discrimination), not the expiry of the record itself for ex-offenders’ job-finding hazards.
- **ref:** Ahmed, A. & Lång, E. (2017). The employability of ex-offenders: a field experiment in the Swedish labor market.
why it differs: Nordic correspondence audit documenting record stigma in callbacks; does not exploit any statutory clearing schedule or measure realized employment transitions.
- **ref:** Bhuller, M., Dahl, G.B., Loken, K.V. & Mogstad, M. (2019). Incarceration, Recidivism, and Employment.
why it differs: Norwegian judge-leniency design identifying effects of incarceration itself, not of criminal-record disclosure or its statutory expiry.
- **ref:** Gotze, M. (2010). Straffeattestkultur på arbejdsmarkedet; Gotze, M. (2011). Retlige grænser for brug af straffeattester på arbejdsmarkedet.
why it differs: Danish legal scholarship documenting the straffeattest screening culture and its legal limits; descriptive/doctrinal, with no causal estimates of employment outcomes around clearing dates.
- **ref:** Backman, C. (2012). Mandatory Criminal Record Checks in Sweden: Scandals and Function Creep.
why it differs: Sociological account of the expansion of Swedish record checks; no employment-outcome identification from disclosure expiry.
- **ref:** van ’t Zand, E. & Boone, M. (2023). Privacy, promotionalism and the proliferation of state-performed criminal record screening in the Netherlands.
why it differs: Institutional analysis of Dutch certificate-of-conduct (VOG) screening volume, not a quasi-experimental study of record expiry and job-finding.

novelty verdict: sharpen

sharpened claim: Do not frame W5.4 as the first evidence on automatic record clearing: US automatic/clean-slate expungement evaluations exist (Agan, Garin, Koustas, Mas & Yang 2024; Onal 2022) and must be cited as the nearest neighbors. The contribution is the first individual-event-time test of record-disclosure expiry in a universal certificate regime where (i) the clearing date is statutory, non-discretionary, and known ex ante to the worker, (ii) the 2/3/5-year sanction-tier schedule generates within-design migration of the effect date as an identifying signature, and (iii) never-disclosed Road Traffic Act fines provide a same-population placebo offense class. Residual risk recorded honestly: general web search engines and Google Scholar could not be queried in the recorded session, and Danish-language working papers indexed nowhere in OpenAlex/Crossref could exist.

Checked citation display and inherited positioning

Prescott, J.J. and Starr, S.B. (2020), Expungement of Criminal Convictions: An Empirical Study, *Harvard Law Review* 133(8), 2460-2555. Publisher page above confirms 2020; source YAML also uses 2019. Agan, A.Y., Garin, A., Koustas, D.K., Mas, A., Yang, C.S. (2024), Can You Erase the Mark of a Criminal Record? Labor Market Impacts of Criminal Record Remediation, NBER Working Paper 32394, DOI 10.3386/w32394. Metadata-only verification for the latter, direct access blocked.

The manuscript preserves the source distinction between petition-based expungement, automatic-remediation policies, audit/callback studies and individual certificate-date variation. Additional inherited citations are recorded below as supplied source bibliography/nearest-work entries rather than independently verified literature or permission for new analyses. The source's claims about salience, universal screening and no prior Nordic study are bounded source positioning, not new findings.

Inherited report bibliography: Agan & Starr (2018), *Quarterly Journal of Economics* 133(1), 191-235; Ahmed & Lång (2017), *IZA Journal of Labor Policy* 6(6); Bhuller, Dahl, Løken & Mogstad (2020), *Journal of Political Economy* 128(4), 1269-1324; Blumstein & Nakamura (2009), *Criminology* 47(2), 327-359; Doleac & Hansen (2020), *Journal of Labor Economics* 38(2), 321-374; Selbin, McCrary & Epstein (2018), *Journal of Criminal Law and Criminology* 108(1). YAML nearest-work years differ for some working-paper versions (Agan/Starr 2017, Doleac/Hansen 2019, Bhuller 2019); source title/author identities are retained without asserting that versions are identical. Onal 2022, Gøtze 2010/2011, Backman 2012 and van 't Zand/Boone 2023 appear in inherited search record only. No citations or results were fabricated to fill those access gaps.

Shared data contract

This is a schema-only SOURCE-PROTOCOL conversion, dated 2026-09-05. The original scientific authority is `prereg.yaml v1.0`, created 2026-08-21, frozen at `aa65f6764ddf`. Tables below are permitted under the current all-531-FSV planning boundary, `inputs/data-boundary.yaml`, `evidence_date 2026-09-05`, `asserted_state`

user_assumed_available_for_planning, validated_tables=[]]. No mount, row, count, follow-up, link success or identifying variation has been validated. NOTE.md's September-1 upload-list restriction is historical provenance; it does not restrict this run. Schema references support documentation only.

Exact source-to-current schema candidates

All local documentation paths below are relative to the repository's resources/schema/data-registry-bolero/. FSV names are planning-table identities, not delivery coordinates. The source PERSON_ID/AJO_PERSON_ID identifiers are person-key classes; FSV lists PNR, and a governed pseudonym crosswalk is required. No identifier values are present. No original key may be read or exported by this author.

Construct	Allowed candidate table and exact source fields	Row/reference semantics and documented coverage	Join and unresolved requirements
Decisions, sanction arms, historical conviction history	KRAF: AFG_AFGOEDTO AFG_ANKEDTO JOURNR, AFG_AFGRETKO AFG_AFGTYP3, AFG_GER7, AFG_FRAKKOD, AFG_BSTRFLGD, AFG_UBSTRFLG; source PERSON_ID; FSV PNR	Annual status extracts of deci- sion records, many decisions per per- son; listed fields 1980-2025. living- conditions/KRAF.md Variables/History; TIMES social- conditions-health- and-the-justice- system/crime- statistics.md; HKV Kriminalitet— afgoerelser	Person history 1:N; same person+JOURNR case rows may reflect appeal/instance, not new crimes. Exact key pseudonymization, version/dedup rules and final-instance rank table unfinished. 2014 PERSON_ID correction is docu- mented; delivered version requires verification. AFG_AFGRETKO's label alone does not establish court rank.

Construct	Allowed candidate table and exact source fields	Row/reference semantics and documented coverage	Join and unresolved requirements
Custodial release clock	KRIN: IND_LOESLDTTO, JOURNR; source PERSON_ID; FSV PNR	Admissions/releases, many per person; register 1980-2025, release field 1991-2025. living-conditions/KRIN.mdr same Crime statistics TIMES, HKV Kriminalitet—indsaettelser	Primary source match PER-SON_ID+same JOURNR; fall-back person match for different-JOURNR release per source. Earliest release strictly after index decision, within 8 years; collapse 1:N to one qualifying release. Tie/unresolved version policy is a pre-data gap. 2016 PNR-error correction documented.

Construct	Allowed candidate table and exact source fields	Row/reference semantics and documented coverage	Join and unresolved requirements
Employment at month start, any job start, industry, hours, wage, match end	BFL: source AJO_PERSON_ID source AJO_JOB_START_DATE AJO_JOB_SLUT_DATE AJO_BRANCHE07 AJO_ARBNR_SENR AJO_LOENTIMER200812-202512; AJO_SMALT_LOENTIMER200812-202512; FSV PNR	Event register, compressed jobs; annual/delivery time coverage 200812-2025 with relevant variables tied only 200812-201712. labour-income-and-wealth/BFL.md; TIMES labour-market/employment-for-employees.md; HKV Beskaeftigelse-for-loenmodtagere—BFL	Person->jobs 1:N; derive bounded month state before joining 1:1 person-month. Source job interval inclusive of first day. Highest paid person chooses attributes among simultaneous starts; tied hours unresolved. No later workplace-key substitute authorized. Do not interpret December reference labels as proof that individual event dates begin in December or full coverage exists.

Construct	Allowed candidate table and exact source fields	Row/reference semantics and documented coverage	Join and unresolved requirements
Population spine, eligibility, sex, birth date, exit	BEF: PNR (source PERSON_ID), KOEN, FOED_DAG, reference semantics requiring verification; CPST considered only as historical source crosswalk	BEF quarterly status 1985-2026; fields 198512-202606. population-and-elections/BEF.md, TIMES cross-cutting-products/module-data-for-population-and-elections.md, HKV Folketal. CPST annual status 1975-2006, population-and-elections/CPST.md	Source wants resident at index and spine presence at event-window start, person 1:1 after time selection. Exact time-specific spine/death-exit mapping unresolved. Quarterly absence alone is not an exact death date. Source wants missing DOB excluded only from balance but also requires age eligibility: conflict U05; no guessed age. No DOD outcome or alternate mortality analysis added.

Construct	Allowed candidate table and exact source fields	Row/reference semantics and documented coverage	Join and unresolved requirements
Emigration censoring	Source VAN_VFRA; candidate VNDS_UD has HAEND_DATO, PNR, REFER-ENCETID (unverified meanings); CPST documents VAN_VFRA only 199112-200312	Source HKV Emigrations from Denmark claimed 1973 onward; current VNDS_UD annual status 2005-2025, created 2026 with historical content; population-and-elections/VNDS_UD Historic VNDS lookup does not establish source VAN_VFRA.	Person->emigration events 1:N. Must establish source-compatible date mapping and coverage before censoring; HAEND_DATO is not silently substituted for VAN_VFRA. The all-FSV boundary permits planning but not semantic equivalence.
Annual wage check E2	IND: LOENMV_13 and source person key, FSV PNR	Person-year status period, nominal total wage income; FSV field 1980-2024, source HKV validity 1987 onward. labour-income-and-wealth/IND.md; TIMES income-consumption-and-prices/personal-income.md; HKV Personindkomster	Person x calendar-year join 1:1 after delivery-version selection. E2 requires full clearing-year +/-1,+/-2 windows. Tax-year definitions, unit/vintage and missing-year behavior require pre-data confirmation; no self-employment measure substituted.

Construct	Allowed candidate table and exact source fields	Row/reference semantics and documented coverage	Join and unresolved requirements
Benefit state E5	OF: PTI_TILSTAND_CODE, PTI_VFRA, PTI_VTIL; FSV PNR for source person key	Source interven- CODE spells; annual status register header 2007-2024 but variables listed 2007-2025. living- conditions/OF.md; TIMES labour- market/unemployment- amfora-social- assistance.md; HKV Offentligt- forsoergede-	Person x month- start interval join, potentially overlapping spells. No covering spell -> other only under source completeness. Exact historical UL/activation list/overlap precedence unfinished; documented unemployment code change July 2017 to 5025 is not a full list. Header/field coverage inconsistency remains documentation uncertainty.

Official FSV page locators are the Source URLs on each cited page; English translations are retrieval aids. Current documented ranges are not source legal vintages or actual delivered coverage. No source table outside the allowed boundary is used, and allowed but unrelated FSV tables do not expand the study.

Shared population, indices and preprocessing

1. Freeze U01-U06 and all source-required pre-IPA scripts/appendices before Stage B. Source legal-vintage horizons are F/T pseudo decision+24 months, S decision+36, C actual release+60; apply the historically valid rule at source clock origin, not today's rules retroactively. Drop listed ambiguous subperiods, stop if the source 80% expected-decision coverage condition fails. Denominator and weights must be fixed from source-supported documentation before data; no invented expected counts.
2. Extract KRAF history from 1980 through needed follow-up, retaining all A3/A4 fields. Source guilt-with-sanction screen is the union of arm sanction codes, across

any offence type. Organize same-case appeal rows without treating appellate decisions as new independent convictions. Source lacks exact deduplication/revision precedence; freeze it before creating indices. Assert all joins reconcile to the sample-flow ledger.

3. Candidate decisions are 2009-01-01 through 2017-12-31, single observed guilt-with-sanction decision since 1980 up to index. The 2018-2019 reserve exists only under the original Stage-A widening contingency where full +18 fits coverage; A1 did not execute widening. Do not widen automatically for a weak result or repeat the power cascade. Earlier-than-1980 adult history is unobserved; 'single conviction' is the source label, not a verified lifetime count.
4. For an appeal, order same-JOURNR decisions by source-required instance and date, use the latest final-instance date. Unresolvable appeal -> exclude and count. The actual AFG_AFGRETKO->rank mapping and same-case dedup rules are unfinished; do not infer ranks numerically or from a label. Nonappealed use AFG_AFGOEDTO.
5. Arms: F=AFG_AFGTYP3 211-225 and Criminal Code plus exact frozen drugs list; S=121-124; C=111,114,117 and linkable release; T=211-225 Road Traffic Act fines passing A3. T excludes 219, any AFG_FRAKKOD disqualification or custodial element; excluded cases enter no arm. Exclude 112,113,115,116,118,311-323,0, missing/unclassifiable offence codes and unresolved appeals. Exact seven-digit offence ranges, sanction meaning by historical vintage and unresolved sanction classification cannot be fabricated. The source code sets are preserved despite concerns about their legal interpretation.
6. C: match primarily person+JOURNR; source fallback for another JOURNR is person-level earliest IND_LOESLDTO strictly after index and within eight years. Record unmatched, fallback and tied records; do not invent a tie breaker. Linkage denominator is custodial decisions before release exclusion. <90% yields source-contingent F+S H1 documented before treated contrasts; C estimates remain exploratory. This contingency does not delete the C target inventory.
7. Require age 18-55 at clock origin, resident at decision and on spine at window start. Source also directs missing FOED_DAG/KOEN exclusion only from balance, never main: missing DOB makes eligibility unresolved, not an invitation to impute or drop silently. Source death/spine exit dating requires U05. Complete eligibility coding precedes contrasts.
8. Build bounded person-month panels [-24,+18] around scheduled clearing month, multiple non-employment spells allowed; risk set iff no compressed BFL job satisfies $\text{start} \leq \text{first-of-month} \leq \text{end}$. Outcome is binary any start in that month, no trimming. This inclusive rule means a job starting on day one covers day one; preserve this exact source definition rather than changing inequalities. Absence of a BFL row means no employee job only after coverage/completeness/linkage are established. Missing end dates/open jobs, repeated compressed-job records and ongoing pre-2008 nonemployment duration remain U06, not default assumptions.
9. For several starts in one month, any-start stays binary; select attributes from start with most paid hours that month. A tied or missing maximum and whether

hire-level E1/E3 use all starts are source gaps. Dates, industry DB07, workplace identifier, hours and wages retain their source meanings.

10. Exclude persons whose clearing date has fewer than 12 observable pre months or six post months within BFL coverage. Source full [-24,+18] coefficients may remain unbalanced; missing required contrast bins cannot be dropped from an equal-bin contrast. Long custodial releases can extend beyond documented coverage despite early decision cohorts; no source assertion of guaranteed full observability is adopted as evidence. Count C observability losses and describe selection toward earlier releases without estimating it here.
11. Censor at month of new guilt-with-sanction decision, emigration, death, age60 or coverage end. No post-baseline reconviction-free selection at initial inclusion. Reset-clock sensitivity belongs to H1 and must use historical legal specification. Attach OF states and IND annual data only for their source purposes. Person fixed effects are only a source sensitivity, not the primary.

Seven source Stage-B checks and exact dispositions

Check	Source threshold/quantity	Disposition
1 coverage	Arm/year decision counts versus definition-aligned STRAF11/STRAF40, within +/-5%	>5% requires written outcome-neutral reconciliation before proceeding; unreconciled stops. No new StatBank count is obtained in conversion.
2 linkage	CPR >=95%; custodial release >=90% within eight years	CPR failure unresolved stops; C <90% uses source F+S contingency, not a full stop.
3 outcome plausibility	Employment[-24:-19] 30%-80%; at-risk hazard[-24:-7] 1%-15% monthly	Outside ranges halts pending written reconciliation. These are future prescribed baseline checks; no quantities viewed here.
4 missingness	GER7/AFGTYP3 >=99% nonmissing; industry >=95%; unresolved appeals <=5% of appealed	Unreconciled key/appeal violations halt; >5% missing industry triggers dual coding, not H1 suppression.

Check	Source threshold/quantity	Disposition
5 dates	>5% of cohort-year decisions on one date flags heaping; >40% starts on day one confirms monthly timing	Heaping triggers exclusion sensitivity and sign/significance foregrounding rule; job-date check documents the already-monthly resolution.
6 composition	All standardized differences in KOEN/five-year age bands <.10, pre[-6:-1] vs post[0:5] risk set	Larger differences require report and reweighting, do not stop main; exact equality and weights unresolved U11.
7 mechanical density	No calendar-month share >2x uniform (source gloss >16.7%) by arm	Violation triggers legal-code audit before event-time models; unreconciled stops. Exact rational 2/12 vs rounded .167 comparison is source rounding gap U11; preserve both and freeze convention before execution.

Precise unresolved pre-data gates

These are not new experiments. No independent reviewer or Transcriber may fill scientific choices. ‘Resolve’ means locate already authoritative detail or obtain a transparently timestamped source-author decision before outcome access; any new scientific decision is a disclosed amendment, not original registration. Pending requirements are not empirical failure. The source’s full-script pre-IPA deposit is a global prerequisite; once an eligible execution starts, scoped optional-component failures do not retroactively remove independently interpretable results.

Gate	Missing requirement / source conflict	Dependent scope and disposition
U01 historical law	Exact executive-order provisions and amendment/date table (source asks 2007-2020), offence coverage, drugs list, traffic sanction screen, reset rule; issuance-date changes in follow-up must be reconciled with source clock-origin vintage rule	Global pre-IPA gate. Current guidance does not settle 2009-2017 or follow-up; no historical code list/horizon guessed. If <80% expected decisions unambiguous, source stop.
U02 legal coverage denominator	Numerator/denominator and expected-decision weights for the 80% rule, and any permissible reserve widening application	Global source gate; preserve original 2009-2017 scope and source stop rather than invent counts/power inputs.
U03 appeals and identity	AFG_AFGRETKO final-instance ranks, meaningful same-case identity, final-decision deduplication/version precedence and release ties	Global cohort gate. A4 supplies field additions, not rank values. No ordinal interpretation of court codes.
U04 physical/source crosswalk	Governed pseudonym mappings, actual table/field/vintage coordinates, source missing files including full R/Stata programs; no invented paths	Global before data application/Stage B; metadata only here. The source claimed access statement/stdout are not in the supplied eight-file provenance inventory.
U05 spine/eligibility/censoring	BEF/CPR reference selection; source VAN_VFRA mapping over study period; exact death/spine-exit date; missing DOB versus mandatory age eligibility	Global core cohort/censoring gate, no substitute date/age or new death outcome.

Gate	Missing requirement / source conflict	Dependent scope and disposition
U06 BFL model construction	Left-censored nonemployment-spell duration at 2008; missing/open job end dates; repeated compressed jobs, attribute ties; rank/estimability of registered FE contrasts	Source analysis/extraction freeze gate; no audit-proposed 37+/censored bin or statistical workaround adopted.
U07 arm-T non-gating band	Exact hazard-ratio estimand, LPM-to-ratio map, uncertainty and ‘tightest band around 1 excluded at 90% CI’ construction	T target remains unresolved pre-data; complete band is part of archive-first obligation, its value never gates H1. No new cloglog, equivalence margin or TOST variant.
U08 industry mapping	E4 exact authority-position list; historical certificate-intensity grounds; DB07 format, source-missing values at $\leq 5\%$ and three-way missing class; zero denominator; bootstrap failures; F4 model-to-hazard-level mapping	H2/E4 scoped gates; preserve binary list and exact $<1000/\text{cell}$ reporting gate; no new sector exclusions or ratio fix.
U09 exploratory multiplicity	Number of component tests within E1/E4/E6/E7, overlap of H3c with E7, adjusted-CI versus percentile-CI language, bootstrap p rule, absent-member treatment and heterogeneity family	Preserve named source families; no minimum-p combination, new joint test, reduced family, new correction or manufactured adjusted CI. Estimates can remain component-wise where specified, adjusted claims unresolved. E5 singleton is settled by final YAML, not reopened.

Gate	Missing requirement / source conflict	Dependent scope and disposition
U10 employed mobility	Source workplace ID documented only through 2017; exact job-to-job continuity/risk set, concurrent workplaces, destination interaction specification	E6 and applicable workplace disclosure clearance; do not substitute later ID or suppress other modules.
U11 routine sensitivity mechanics	Anticipation raw versus adjusted trigger, matched-T weights/resampling and zero hazard, reweighting estimator, age heterogeneity specifications, density rounding/equality, complete historical reset rule	Preserve all source variants and triggers; source-silent implementation choices unfilled. No new thresholds, estimators or adaptive selection.
U12 quality measurements	E1 winsorized-hours text versus hours>400 rule; first full month/short jobs, log nonpositive wages, annual missing-year handling, E3 censored duration/missing end, all starts versus selected start	E1-E3 components remain traceable and partially reportable where independent. No log1p, annual-zero filling, duration imputation or new trim.
U13 benefit codes	Complete PTI UI/activation list by vintage and the asserted but absent overlap-priority algorithm; source OF coverage metadata differs by field/header	E5 scoped gate. A single documented code change does not supply a full class map.

Gate	Missing requirement / source conflict	Dependent scope and disposition
U14 disclosure transforms	Exact ordering of other- category/adjacent-bin collapse, when aggregation changes interpretation, workplace concentration handling, current authorized clearance rule	Export gate only where independently estimated results exist; report withheld outputs and reasons, never fabricate or suppress an unfavorable model. Source numeric thresholds are preserved, no claim of current DST approval.
U15 editorial provenance	Source A1 submitted for editorial adjudication; no actual acceptance supplied; if rejected original stop stands	Conversion does not count as acceptance or reopen completed planning simulations. Native draft may be formatted; execution approval remains unestablished.

Identification and inferential contract

The source’s causal ceiling is a prospective ceiling, not a finding or current validation. Source prereg.yaml owns the science; native Atom registrations own its converted units and local conditions. This document supplies incorporated shared definitions. All source analyses are preserved; no new estimator, outcome, threshold, legal assumption or remedy is authorized.

Source-preserved registered claim ceiling

Causal — but for exactly one registered quantity: the effect of reaching the statutory private-certificate clearing date on the employee job-finding hazard (pooled F+S+C), licensed solely by the confirmatory H1 discontinuity surviving both registered disconfirmation gates (the placebo-anniversary equivalence gate with its $\alpha=0.01$ screen per Amendment A2, and the arm-T never-disclosed kill gate, estimated placebo-first). The power-driven fixed-point demotion of H2, H3, and H3c to the exploratory tier NARROWS this ceiling relative to the original design: fine-grained attribution of the jump to certificate clearing specifically — as against residual disclosure-arm-specific timing institutions — is presented as strongly consistent with the gate structure and the embedded 24/36/60-month cross-arm alignment, and is upgraded in prose by exploratory schedule-migration corroboration only with the explicit label that such corroboration is exploratory. Mechanism attribution to employer information sets is capped a further level down at consistent-with (worker-side awareness of the

date is inseparable in principle and is apportioned, not excluded, via the exploratory H2/E4/E6 signature). No predictive or generality claims (Danish statutory certificate regime; employee jobs only). If either kill gate fires, the ceiling drops to associational/descriptive and the prose follows it down; exploratory results can never raise the ceiling.

Maintained assumptions and limits

Local smoothness of the counterfactual hazard over the source contrast window is maintained, conditional on calendar and spell-duration fixed effects. The legal clock must be correctly measured; screened T must carry the source never-disclosed interpretation; no new effect-time-specific institutional change may confound the disclosed cohorts. Certificate requests and worker awareness are unobserved. The source describes information change as total employer-plus-worker response and cannot isolate the employer share. Risk-set entry/exit and censoring are not randomized. Source assertions that misdating can only attenuate and that selection changes levels but cannot create a jump are maintained source assertions, not logical guarantees established by conversion or metadata. Their validity remains a stated identification limitation.

The conceptual study-DAG is derived from those source assumptions: sanction/history and legal rules determine the scheduled clock, the clock may change visibility and worker search, while traits, duration and institutions may affect selection and job finding. It depicts no observed coefficients and grants no new adjustment set. It is distinct from the activation graph. Later job finding affects subsequent risk-set membership, not a contemporaneous graph cycle.

The causal label is licensed only for the source H1 scheduled-date quantity within its registered population and assumptions, after both claim gates are evaluated. Attribution to the particular private-certificate mechanism over residual disclosed-arm timing institutions is strongly consistent-with. Employer-specific mechanisms remain at most consistent-with. Exploratory schedule/industry/mobility results cannot upgrade H1, and any kill reduces the ceiling to descriptive/associational. Non-significance is not equivalence. Missing operational work is not evidence of zero. Negative effects cannot be relabeled favorable. C exclusion via the source <90% linkage rule narrows the pool to F+S and does not create another confirmatory family.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18, k \neq -1} \beta_k 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in pooled F+S+C (or source-contingent F+S) only}$. Use $R \geq 4.3$, $\text{fixest::feols} \geq 0.11$, OLS LPM, person-cluster CR1 covariance; primary has no person FE and no other covariates. The deposited Stata `reghdfe` fallback is only promised; its complete identical specification must be frozen before execution. No new software versions or physical paths are inferred. For any contrast, retain the omitted -1 coefficient as the defined reference zero and form its registered equal-bin linear combination and covariance, not raw pooled-window hazard means. The simulation's ratio-of-totals calculation is not a replacement

estimator. $\text{delta} = \text{mean}(\text{beta}[0:5]) - \text{mean}(\text{beta}[-6:-1])$; $\text{delta_plac} = \text{mean}(\text{beta}[-12:-7]) - \text{mean}(\text{beta}[-18:-13])$. Estimate $\text{SE} = \sqrt{\text{c}' \text{V_CR1} \text{c}}$ and the registered two-sided Wald p and 95% CI. Missing/unidentified bins needed for a contrast are a nonestimability boundary; do not average only available bins. Raw binned hazards are separate descriptive outputs. Exact source-silent implementation choices remain in the pre-data gate ledger.

Source-preserved source assumptions

- Local smoothness: absent certificate clearing, the counterfactual job-finding hazard is smooth in event time over the -6..+5 contrast window, conditional on calendar and spell-duration fixed effects
- The Stage-0 legal encoding is correct: fines clear 2 years and suspended sentences 3 years from the final-instance decision date (appeal rule), unconditional custodial sentences 5 years from IND_LOESLDTO, per the vintage in force at decision; certificate coverage spans Criminal Code and the frozen drugs-offence list while most Road Traffic Act offences never enter the private certificate (mis-encoding attenuates toward null, so this assumption is conservative for false positives)
- BFL completeness from 01-01-2008: absence of a compressed-job record means no employee job that month (self-employment explicitly out of scope of the claim; E2's LOENMV_13 check is the register-independent audit)
- Arm T is a valid placebo for anniversary-timed non-disclosure dynamics AFTER the Amendment A3 sanction screen (traffic fines with disqualification or custodial elements, which DO enter the certificate, are excluded): remaining traffic-fine recipients face the same calendar institutions and duration clocks conditional on the fixed effects; a levels difference in employability is harmless, and only a differential 24-month discontinuity would corrupt the kill gate (audited further by E5's direct benefit-state decomposition); residual edge cases in historical AFG_FRAKKOD coding are resolved by the Stage-0 memo's sanction-contingent disclosure table
- Employers request the private certificate at non-trivial rates in at least some industries (maintained assumption motivating the design; its industry structure is what exploratory H2/E4 probe, and H1 is interpretable even if requests are diffuse)
- Censoring at new convictions, emigration, and death is non-informative for the discontinuity contrast conditional on the fixed effects (bounded empirically by the reset-clock robustness)
- Mechanical purging at certificate issuance is a statutory fact, so the employer-side information change at the scheduled date requires no behavioral assumption; only the worker-side response component is behavioral, and the estimand is defined as their total informational effect
- Single-conviction restriction plus censoring makes the statutory clearing date well-defined and unique per person; the appeal rule makes the clock origin the legally operative final-instance date
- The frozen floor effect (+0.30 pp, 7.5% relative) is a defensible lower bound on a real clearing effect; the design's confirmatory verdict is calibrated to it, and the effect x 0.5 sensitivity (H1 test power 0.838) is disclosed as the boundary of that calibration

Source-preserved source threat/response inventory

- **threat:** Duration dependence and smooth desistance: job-finding hazards evolve with time since conviction and time non-employed, mechanically generating trends near the clearing date

addressed by: Non-employment-spell-duration fixed effects absorb spell-duration dependence; smooth trends cannot produce a discontinuity that (i) passes the within-cohort placebo-anniversary gate (alpha 0.01 screen plus 50%-magnitude bound), (ii) survives the arm-T kill gate at the identical 24-month mark, and (iii) appears in a pooled sample whose arms are centered at three different horizons (24/36/60 months) on two different anchors; the formal migration test (H3b) is exploratory corroboration

- **threat:** Anniversary-timed institutional clocks (UI benefit exhaustion, activation-program milestones) that coincide with 24 months and mimic a clearing jump

addressed by: Arm T (Road Traffic Act fines) faces the same benefit clocks and calendar institutions but no certificate clearing; the arm-T kill gate — estimated first under the estimation-order lock — withdraws H1’s causal reading if T jumps; calendar year-by-month FE absorb aggregate policy timing; E5’s PTI benefit-state decomposition audits the confound directly; the TOST band quantifies how tightly the realized T null bounds anniversary dynamics

- **threat:** Worker-side anticipation: workers know the date and delay applications just before clearing, inflating the jump

addressed by: Pre-specified anticipation-dip test with a donut contrast (-6..-3 vs +1..+6) reported when triggered; the estimand is defined as the total informational effect of the record clearing (employer plus worker response to the same information event); employer-side attribution rests only on the exploratory H2/E4/E6 signature and is labeled consistent-with; E6’s directed-mobility estimate apportions the worker-side share

- **threat:** Mis-encoded statutory horizons, appeal-delayed finality, or legal-regime changes (youth-record rules changed mid-2010s)

addressed by: Stage-0 legal-vintage memo frozen before registration; the appeal rule anchors the clock at the final-instance decision; adults 18+ only; ambiguous subperiods dropped by pre-registered rule; the clearing-month density check audits the mechanical clock; misdating attenuates toward null rather than manufacturing a jump, so it cannot create a false positive

- **threat:** Selection into the risk set: those still non-employed at the clearing date are a selected subgroup

addressed by: The estimand is the hazard among the at-risk population, standard for duration designs; selection shifts levels, not the within-cohort discontinuity, unless composition jumps exactly at the boundary — audited by the covariate-smoothness outcome-neutral check with a reweighted robustness

- **threat:** New convictions reset the disclosure clock, making scheduled clearing wrong for reoffenders; excluding them outright would condition on post-baseline behavior

addressed by: Censoring at the month of any new decision of guilt (not exclusion of the person-history after the fact); the single-conviction screen uses only pre-index history; the Stage-D bounding estimate re-includes post-reconviction months with statutorily reset clocks and its divergence rule is pre-committed

- **threat:** BFL observes only employee jobs; transitions to self-employment are invisible and could masquerade as continued non-employment

addressed by: Claim is explicitly restricted to employee job-finding; exploratory E2 uses annual LOENMV_13 (Personal incomes) as a register-independent earnings check; limitation stated in the registration

- **threat:** Employer certificate requests are unobserved; the industry gradient is a proxy

addressed by: Certificate-intensive DB07 list fixed pre-registration from statutory certificate/authorization requirements, never fitted to data; the E4 public-certificate located null (division 84's 10-year public-certificate horizon predicts an attenuated jump there) sharpens the proxy; H2/E4 are exploratory and their failure is pre-committed to weaken, not be explained away from, the employer-side mechanism claim

- **threat:** Underpowered schedule-migration and industry-gradient machinery: at the frozen floor effect, H3 (0.2817) and H2 (0.8817) cannot meet the 0.95 standard, so their nulls are uninformative and their confirmatory use would be miscalibrated

addressed by: Fixed-point demotion of H2 and H3 (and H3c by its own gate) to the exploratory tier before registration (the cascade itself is registration-stage Amendment A1); the confirmatory causal claim is correspondingly narrowed and the claim ceiling lowered; disconfirmation capacity is retained through the arm-T kill gate and placebo gate, whose false-firing rates are alpha-bounded — with the complementary caveat, stated because it cuts against the design, that the gates' DETECTION of real violations is power-dependent and quantified in power.gate_detection (placebo kill 0.472 at a true placebo jump of half the floor; arm-T kill 0.372 / 0.950 at true arm-T jumps of 50% / 100% of arm F's); exploratory nulls are pre-committed to be reported as uninformative at achieved power, never as evidence against migration

- **threat:** Thin cells in industry-level outputs breach DST disclosure rules or force ad hoc aggregation

addressed by: H2/E4 use pre-registered coarse industry classifications (binary and three-way), not granular DB07 tables; all released cells ≥ 5 persons by construction, with the collapse rule pre-registered

Source-preserved source failure-mode inventory

- Realized single-conviction cohort sizes fall below the power simulation’s midpoint assumptions (schema-only corpus; no realized Ns) — caught at Stage-B coverage checks; the $N \times 0.5$ sensitivity bound (H1 test 0.992) shows substantial slack, and pre-registered widening to 2018-2019 cohorts remains available
- Custodial arm too small or poorly linked (IND_LOESLDTO), removing arm C from the pooled confirmatory H1 (re-registered on F+S) and leaving the 5-year schedule point entirely exploratory
- Anniversary-timed benefit or activation-program clocks that differ between Criminal Code and traffic offenders (imperfect placebo), leaving a residual differential discontinuity that the arm-T kill gate cannot fully adjudicate; E5’s PTI decomposition is the direct audit but is exploratory
- Worker-side retiming of search around the known date accounts for most of the jump; the design then measures a real informational effect but the employer-belief narrative must stay at consistent-with, and exploratory H2/E6 may show a null industry signature while H1 holds
- Attenuation from mis-dated horizons, unresolved appeals, or stale certificates in circulation issued just before clearing, pushing a true effect below the detectable bound and producing an uninformative bounded null
- Anticipation dip just before clearing misread as a jump — addressed by the donut contingent rule but reduces interpretability if severe
- BFL compressed-job date imprecision (starts heaped at month boundaries) coarsens timing; monthly resolution absorbs most of this, but a jump could smear across bins 0 and +1 and weaken the sharp test
- Traffic-fine arm compositionally so different (near-full employment, tiny non-employed risk set) that the kill gate and exploratory H3a are informative only after matching, weakening the conservative no-moving-parts stance
- The central structural loss from the power adjustment: with H3 and H2 exploratory, a confirmed H1 arrives without confirmatory schedule-migration or industry-gradient backing, so the certificate-clearing attribution leans on the gate structure alone and a skeptical reader can sustain a residual-timing-artifact reading that the exploratory tier may lack power to dispel (schedule-family conjunction power 0.28 at the floor)
- DST output clearance delays or stricter-than-assumed cell rules force collapsing event-time bins in exported figures (does not affect estimation, only presentation)
- A mid-window legislative change (e.g., youth-record reform spillover or 2021 certificate amendments) truncates usable cohorts and shrinks the confirmatory window

Claim gate scope and source wording conflict

Some source summary sentences call every placebo gate failure a design failure. The explicit H1 primary__quantity and kill__criterion separate non-support from a positive-significant placebo kill; the conversion preserves that precise rule. K_T consumes archived T and newly estimated F, and K_P consumes main plus placebo. Neither is

a prerequisite for obtaining H1. The primary estimate remains visible for all outcomes. Source threshold equality and signed-denominator implications are registered in atom-000003; no new protective absolute values or epsilon are introduced.

Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.

Source planning calibration (not observed data)

The supplied source records a completed Stage-A simulation, not fresh empirical evidence. No power code is run in this conversion. Its fixed sample assumptions are $F=85000, S=35000, C=20000, T=170000$; baseline hazards $F/S=.04, C=.035, T=.06$; losses .028/.028/.035/.016; lognormal frailty $\sigma=.5$, mean1, cap .35; initial steady state, event months -18..+5; relative effect .075 (.30pp at .04, .26pp at .035), T zero; industry share .12, cert rise .20 versus .05795, theta approximately .142. Seed 20260818, PCG64/numpy2.2.6 as source-recorded, 1200 main draws and 500 per sensitivity/violation. These inputs, sample ranges and forecast intervals are planning assumptions, never attained precision or cohort sizes.

Source power calculations use window ratio-of-totals/influence functions, not the actual FE LPM or full 999-resample bootstrap. Stationarity is a simulation assumption; real FE collinearity can change precision. Source reports H1 Wald1.0000; A2 Wald-plus-placebo support .9883 versus .9492 under old screen. This is not joint power of all empirical gates, Stage-B completion and the T kill. H2 .8817 at demotion, H3 .2817, H3a .6625, H3b .3083, H3c .3308. Do not describe those as achieved empirical power.

N x.5 source sensitivity: H1 test .992, support .920, H2 .462, H3 .076, H3c .104. Effect x.5: H1 .838, support .756, H2 .212, H3 .022, H3c .058. The support sensitivities use the superseded .05 placebo screen, not A2; leave them labeled, do not rerun or invent updated values. The +22% N widening assessment is analytic $\sqrt{1.22}$, not an executed simulation scenario. A1 adopted demotion after viewing planning output and replaced a mandated project stop; A2 made real anomalies easier to pass while reducing null false blocks. Both costs remain disclosed.

All additional source simulation figures and frozen forecasts are preserved below or in their owning Atom, explicitly as source assumptions. The scoring convention attaches future outcomes to frozen statements without editing them; bounded-null and design-failure labels remain explicit rather than forcing confirmed/partially_confirmed/reversed categories.

Source-preserved planning simulation result inventory

- **hypothesis id:** H1

test: Wald test on $\delta_{\text{main}} = \text{mean hazard}(\text{event months } 0..+5) - \text{mean hazard}(-6..-1)$, pooled $F+S+C$ non-employed risk set, person-clustered SE; two-sided with positive direction, at final fixed-point family alpha 0.05 (sole surviving family member)

assumed effect: +0.30 pp on 4.0 pp baseline (7.5% relative; 0.26 pp in arm C), from the scheduled clearing month

assumed n: 140,000 persons (F 85k + S 35k + C 20k); realized ~384,000 risk-set person-months per 6-month window

power: 1.0

- **hypothesis id:** H1_support_rule

test: Full registered H1 support rule: delta_main Wald rejection at final alpha 0.05 AND placebo-anniversary equivalence gate ($|z_{\text{plac}}| < 1.96$ and $|\text{delta}_{\text{plac}}| < 0.5 * \text{delta}_{\text{main}}$); the gate imposes a structural $1 - \alpha = 0.95$ ceiling under a true-null placebo

assumed effect: +0.30 pp main jump; true placebo contrast exactly 0

assumed n: 140,000 persons pooled, ~384,000 person-months per window

power: 0.9492

note: superseded by the alpha-0.01 screen amendment below

- **hypothesis id:** H1_support_rule_alpha01_amendment

test: Registration-stage Amendment A2: identical support rule with the placebo screen moved to two-sided alpha 0.01 ($|z_{\text{plac}}| < 2.576$), moving the structural false-block ceiling from 0.95 to 0.99 at the cost of a less sensitive placebo falsification (trade-off stated in full under amendments; detection numbers under gate_detection); computed in the deposited script

assumed effect: +0.30 pp main jump; true placebo contrast exactly 0

assumed n: 140,000 persons pooled, ~384,000 person-months per window

power: 0.9883

- **hypothesis id:** H2

test: $\theta = \text{post/pre certificate-intensive cause-specific hazard ratio minus other-industry ratio}$, pooled F+S+C, person-cluster IF variance (delta-method analogue of the registered 999-rep bootstrap); evaluated at alpha 0.05/2 (family alpha at its demotion step)

assumed effect: $\theta_{\text{true}} = 0.142$ (cert-intensive +20% relative vs other +5.8%, aggregate 7.5%; 12% pre-period cert share of hires)

assumed n: 140,000 persons pooled; ~1,600 certificate-intensive hires per pre window

power: 0.8817

- **hypothesis id:** H3

test: Conjunction of H3a and H3b under exact Holm step-down within H3 at family alpha 0.05/3 (full-family step at which it was demoted), both estimates required positive

assumed effect: $\text{delta}_F = +0.30$ pp with $\text{delta}_T = 0$ (H3a); $\text{delta}_S(36m) = +0.30$ pp with zero 24m-horizon contrast (H3b)

assumed n: F 85k, T 170k, S 35k persons (~209k/248k/86k risk-set person-months per window)

power: 0.2817

- **hypothesis id:** H3a

test: Difference-in-discontinuities $\delta_F(24m) - \delta_T(24m)$, independent-arm variances added, two-sided at $\alpha_f/2 = 0.05/6$ (Holm worst step within H3 at the full-family α)

assumed effect: +0.30 pp in arm F, exactly 0 in arm T

assumed n: F 85,000 vs T 170,000 persons (~209k vs ~248k person-months per window)

power: 0.6625

- **hypothesis id:** H3b

test: $\delta_S(36m) - \delta_S(24m\text{-horizon})$ within the suspended-sentence arm, joint person-level influence functions, two-sided at $\alpha_f/2 = 0.05/6$

assumed effect: +0.30 pp at the 36m clearing date, 0 at the 24m non-clearing horizon

assumed n: S 35,000 persons (~86,000 risk-set person-months per window)

power: 0.3083

- **hypothesis id:** H3c

test: Arm-C contrast at release+60m, two-sided at its pre-registered gate α 0.05/9 (worst case as a third Holm component); design pre-commits demotion to exploratory if power < 0.95 — gate fires

assumed effect: +0.26 pp on 3.5 pp arm-C baseline (7.5% relative)

assumed n: C 20,000 persons (~60,000 risk-set person-months per window)

power: 0.3308

Source-preserved gate simulation inventory

true null false fire: placebo kill alpha01: 0.0017

placebo kill alpha05: 0.0033

placebo support block alpha01: 0.0117

placebo support block alpha05: 0.0508

armT kill: 0.0242

V1 placebo violation: kill fires alpha01: 0.472

kill fires alpha05: 0.488

support blocked alpha01: 0.686

support blocked alpha05: 0.842

V2 armT violation: kill fires: 0.372

V3 armT violation: kill fires: 0.95

reading: A violation at the arm-T gate's own magnitude threshold is missed with probability ~0.63, so surviving the gates bounds — but does not exclude — contamination below roughly half the observed effect; the arm-T TOST band is the ex-post quantification of exactly this residual, and any Stage-2 sentence citing the gates as evidence must carry these detection rates.

Governance, scope and handoff

This is a local SOURCE-PROTOCOL conversion of an existing unpublished preregistration, not replication of a published empirical paper, a new candidate, independent review, legal validation or scientific acceptance. Source registration: 2026-08-21. Conversion provenance timestamp: 2026-09-05T13:08:14.415348+00:00. The historical NOTE deposit date is 2026-09-03. These dates and roles must not be conflated. No data have been accessed and no empirical or planning simulation code has been executed by this converter.

Authority

Source prereg.yaml with its A1-A4 amendments controls the inherited science. report.tex, execution_plan.md and skeletons explain or implement it only where consistent. audit_report.md is evidence of concerns at specific revision stages, never permission to add a remedy. NOTE.md establishes provenance and historical availability only. Each native Atom owns its registered protocol/activation/local states, Molecule membership the full roster, and Molecule registration the storyline and composable interpretation. Shared source documents are incorporated by reference. Manifest, diagrams, reports and paper are derived presentations, not competing authorities. If they disagree, report and correct the derived presentation without changing science.

All source-required pre-IPA missing definitions, editorial adjudication and full-script deposits remain unresolved gates. The current all-FSV planning boundary supersedes the old upload-list limitation but establishes no runtime availability. No private original source files, inspection caches, raw rows, computed outcomes or source PDF are copied into this World. The exact supplied source-provenance.yaml is the expressly required exception for provenance metadata. Audit prose stays in docs/replication/.

Inference and multiplicity

The sole confirmatory family is {H1}, two-sided Wald alpha .05 with person CR1 covariance; no correction is added. Within-cohort placebo uses registered A2 $\text{abs}(z) < 2.576$ and $\text{abs}(\text{delta_plac}) < .5 * \text{delta_main}$; mandatory original-screen sensitivity uses 1.96. Positive-significant magnitude kills are restrictions on interpretation, not confirmatory tests and not multiplicity corrected. Both raw main and all unfavorable estimates are mandatory.

Exploratory Holm families are schedule {H3a,H3b,H3c,E7}, mechanism {H2,E4,E6}, quality {E1,E2,E3}; audit E5 is a single uncorrected test. E7 may appear in the audit table only for presentation and stays corrected with schedule. Component counting, adjusted-CI construction and absent-member treatment left unfinished by source remain U09; neither converter nor Transcriber invents a resolution. Heterogeneity stays exploratory with its unresolved family specification. Source sampling/power/forecasts are planning history, not sample-specific evidence. No new multiplicity allocation, confidence level, equivalence cutoff or robustness test is introduced.

Reporting and execution order

Stage0/pre-IPA freeze and the seven Stage-B checks precede event models. Stage C first archives the T battery, then estimates H1 and F, then evaluates claim gates before any causal sentence. The registered target order then runs schedule before mechanism; quality and benefit audit remain Stage D. The activation graph enforces prerequisite completion rather than favorable significance. T’s original estimate is never rerun to make a gate pass. Routine H1 variants remain inside that Atom; graph ordering of their completion before the schedule module is an engineering schedule compatible with the source target order, not source-authored new science.

All eight members remain in the graph from birth. Initial statuses are pending, no realized local states. A source-unresolved prerequisite is recorded as pending pre-data, not a fabricated scientific boundary. Runtime no_result is an operational terminal, not done; not_activated is reported with its evidence trace. Source Stage-D ‘no stop’ is translated into completion-or-no_result order edges after H1/schedule attempts, so an unfavorable or partially unavailable predecessor does not silently delete otherwise feasible exploratory targets. The shared scope and T-archive prerequisites still bind. No empirical failure authorizes changing a source definition or retrying unregistered alternatives.

Within every Atom, resolve first matching result region and also retain component estimates/statuses. Molecule restrictions compose before primary/supplementary claims. An unforeseen mixed pattern remains unresolved in its scope rather than converted to a favorable conclusion. Necessary assertions verify mapping and data integrity, not new scientific tests. No missing documentation item becomes a stand-alone experiment.

Disclosure and access

The source research environment is DST Forskningservice, with project approval/gatekeeper certification as source-required future conditions. This author has not verified approval. Source export rules require ≥ 5 persons/cell; industry/workplace cells additionally ≥ 3 workplaces and no workplace $> 75\%$. Residual small categories collapse to other; adjacent-bin merging is presentation only, not estimation, and its exact mapping is unresolved U14. No minima/maxima/person-level percentiles/unique-case listings leave; source winsorization rules, rather than disclosive cutpoints, may be reported. Current legal or clearance approval is not implied by this source summary.

All actual input paths live in a future governed runtime overlay; names such as atom-000003/h1-contrasts.csv describe logical outputs only. No contact, data application, public upload, push, release or deployment is authorized in this conversion. No raw identifiers or individual data are included.

Deviations, freeze and format-only Transcriber

Before outcome access, a source gap can be closed only by locating genuine authoritative detail or a disclosed source-author amendment; it cannot be silently labeled original science. After access, any required change records timestamp, evidence seen,

exact scope/reason/approver and effect on confirmatory status. The source closed graph cannot be extended retrospectively as confirmatory evidence.

Transcriber preserves every Atom payload/ID, Molecule membership/policy, shared document, audit file and authored paper/figure source. It does not regroup Atoms, invent source choices, accept science or turn source simulation values into observations. Host builds derived LaTeX/PDFs and seals only when its own checks succeed; this author does not compile host-owned PDFs, mark accepted, seal or create a publication archive. Structural validation is a self-check, not independent scientific acceptance. Compatibility ratings (importance3,novelty1,feasibility1,data_advantage3,informativeness0; Molecule C) are mandatory format placeholders explicitly unauthoritative about science. They do not originate in source estimates or a new novelty competition.

For any evidence sentence invoking gates, include the source calibration limitation: Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.

Registered interpretation rules

Restrictions take precedence over permissions; residual reporting does not invent a finding.

1. restriction

Condition: TRUE

All interpretations are conditional on frozen historical legal encoding, valid measurement and local smoothness. Employer-information mechanism is at most consistent-with; no generality or prediction beyond Danish employee jobs. No independent scientific acceptance exists for this source-protocol conversion.

```
kind: restriction
condition: 'TRUE'
says: All interpretations are conditional on frozen historical legal encoding,
      valid measurement and local smoothness. Employer-information mechanism is
      at most consistent-with; no generality or prediction beyond Danish employee
      jobs. No independent scientific acceptance exists for this source-protocol
      conversion.
```

2. restriction

Condition: state(atom-000001) == "boundary"

Report shared measurement/cohort failure and all unactivated members; no empirical or null conclusion.

```
kind: restriction
condition: state(atom-000001) == "boundary"
says: Report shared measurement/cohort failure and all unactivated members;
      no empirical or null conclusion.
```

3. restriction

Condition: `state(atom-000001) == "scope_fs"`

H1 scope is the source-contingent F+S sample, documented before treated outcomes. C remains wholly exploratory and linked-subset limitations must be disclosed.

```
kind: restriction
condition: state(atom-000001) == "scope_fs"
says: H1 scope is the source-contingent F+S sample, documented before treated
      outcomes. C remains wholly exploratory and linked-subset limitations must
      be disclosed.
```

4. restriction

Condition: `state(atom-000003) == "both_kills" OR state(atom-000003) == "traffic_kill" OR state(atom-000003) == "anniversary_kill"`

Withdraw the causal ceiling. Report all main, placebo and exploratory estimates as descriptive/associational, preserving the actual direction and significance of H1. Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.

```
kind: restriction
condition: state(atom-000003) == "both_kills" OR state(atom-000003) ==
  ↪ "traffic_kill"
  OR state(atom-000003) == "anniversary_kill"
says: 'Withdraw the causal ceiling. Report all main, placebo and exploratory
      estimates as descriptive/associational, preserving the actual direction
      and significance of H1. Source planning simulations only (not rerun here):
      placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T
      kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null
      false-fire 0.0017 / 0.0242. These rates are not achieved empirical power
      or proof of validity.'
```

5. restriction

Condition: `state(atom-000003) == "supported_sensitive"`

Place the alpha-.05-screen implied verdict beside registered A2 support; disclose screen dependence, not a tightened gate. Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.

```
kind: restriction
condition: state(atom-000003) == "supported_sensitive"
says: 'Place the alpha-.05-screen implied verdict beside registered A2
      ↪ support;
      disclose screen dependence, not a tightened gate. Source planning
      ↪ simulations
      only (not rerun here): placebo kill detection 0.472 at a true placebo jump
      of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50%
```

/ 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not
 ↪ achieved
 empirical power or proof of validity.'

6. restriction

Condition: TRUE

Source conditional robustness restrictions compose from the Atom-owned component ledger: anticipation requires worker-retiming wording; heaping sign/significance change foregrounds the exclusion estimate; reset difference >one primary SE restricts to reconviction-free scope; comparator and composition warnings stay visible. Missing components do not acquire favorable meanings.

```
kind: restriction
condition: 'TRUE'
says: 'Source conditional robustness restrictions compose from the Atom-owned
      component ledger: anticipation requires worker-retiming wording; heaping
      sign/significance change foregrounds the exclusion estimate; reset
      ↪ difference
      >one primary SE restricts to reconviction-free scope; comparator and
      ↪ composition
      warnings stay visible. Missing components do not acquire favorable
      ↪ meanings.'
```

7. primary

Condition: state(atom-000003) == "supported_stable" OR state(atom-000003) == "supported_sensitive"

Consistent with H1: positive source scheduled-date hazard effect under the maintained assumptions. Only that quantity may carry the source causal ceiling; specific certificate attribution is strongly consistent-with, and employer-side attribution remains consistent-with. Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.

```
kind: primary
condition: state(atom-000003) == "supported_stable" OR state(atom-000003)
          == "supported_sensitive"
says: 'Consistent with H1: positive source scheduled-date hazard effect under
      the maintained assumptions. Only that quantity may carry the source causal
      ceiling; specific certificate attribution is strongly consistent-with, and
      employer-side attribution remains consistent-with. Source planning
      ↪ simulations
      only (not rerun here): placebo kill detection 0.472 at a true placebo jump
      of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50%
      / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not
      ↪ achieved
      empirical power or proof of validity.'
```

8. primary

Condition: state(atom-000003) == "negative"

Contrary to H1: the significant negative estimate disconfirms the predicted increase. Report diagnostics and limits; never reinterpret it as support.

```
kind: primary
condition: state(atom-000003) == "negative"
says: 'Contrary to H1: the significant negative estimate disconfirms the
↪ predicted
increase. Report diagnostics and limits; never reinterpret it as support.'
```

9. primary

Condition: state(atom-000003) == "bounded"

No evidence for the predicted increase; give the 95% upper CI bound in probability/percentage-point units and relative units if defined. Bound, never accept, the null; persistent characteristics are a possible interpretation, not established mechanism.

```
kind: primary
condition: state(atom-000003) == "bounded"
says: No evidence for the predicted increase; give the 95% upper CI bound
in probability/percentage-point units and relative units if defined. Bound,
never accept, the null; persistent characteristics are a possible
↪ interpretation,
not established mechanism.
```

10. primary

Condition: state(atom-000003) == "not_supported"

Positive main contrast alone is insufficient for support. Report the failed support clause; do not label every non-kill gate failure design failure.

```
kind: primary
condition: state(atom-000003) == "not_supported"
says: Positive main contrast alone is insufficient for support. Report the
failed support clause; do not label every non-kill gate failure design
↪ failure.
```

11. supplementary

Condition: done(atom-000002)

Report the T estimate, full archived profile and single non-gating band with their precise availability status. No null equivalence is inferred from a nonsignificant T estimate.

```
kind: supplementary
condition: done(atom-000002)
says: Report the T estimate, full archived profile and single non-gating band
with their precise availability status. No null equivalence is inferred
from a nonsignificant T estimate.
```

12. supplementary

Condition: done(atom-000004)

Report H3a/H3b and H3c/E7 separately, including mixed/opposite/unavailable cases. Core corroboration is exploratory; low-power nonsignificance is uninformative, and both custodial anchors jumping is anniversary-suspect.

```
kind: supplementary
condition: done(atom-000004)
says: Report H3a/H3b and H3c/E7 separately, including
↳ mixed/opposite/unavailable
    cases. Core corroboration is exploratory; low-power nonsignificance is
    ↳ uninformative,
    and both custodial anchors jumping is anniversary-suspect.
```

13. supplementary

Condition: done(atom-000005) OR done(atom-000006)

Combine only compatible H2/E4 and E6 signatures, preserving their distinct populations and all discordances. Negative/absent industry signature weakens employer attribution; employed mobility is consistent with worker retiming, not an identified causal share.

```
kind: supplementary
condition: done(atom-000005) OR done(atom-000006)
says: Combine only compatible H2/E4 and E6 signatures, preserving their
↳ distinct
    populations and all discordances. Negative/absent industry signature weakens
    employer attribution; employed mobility is consistent with worker retiming,
    not an identified causal share.
```

14. supplementary

Condition: done(atom-000007) OR done(atom-000008)

Describe E1-E3 outcome-specific quality/earnings evidence and E5 benefit-state audit independently. Neither changes H1 confirmatory status.

```
kind: supplementary
condition: done(atom-000007) OR done(atom-000008)
says: Describe E1-E3 outcome-specific quality/earnings evidence and E5
↳ benefit-state
    audit independently. Neither changes H1 confirmatory status.
```

15. residual

Condition: TRUE

List all pending, not_activated, no_result, boundary, partial and source-unresolved targets with trigger traces. Unforeseen patterns license no new claim; no_result is not done and NOT unknown remains unknown. The complete roster is never pruned.

```

kind: residual
condition: 'TRUE'
says: List all pending, not_activated, no_result, boundary, partial and
↪ source-unresolved
    targets with trigger traces. Unforeseen patterns license no new claim;
    ↪ no_result
    is not done and NOT unknown remains unknown. The complete roster is never
    pruned.

```

Preregistered epistemic graph

Each Atom is an interpretable question or diagnostic judgment. Local result states determine registered activation.

atom-000001

Can the source disclosure clock and shared analysis cohort be established within the registered measurement and quality limits?

Activation: TRUE

- **boundary:** After authorized checks, source Stage-0 80% rule fails, or a load-bearing Stage-B stop threshold is unreconciled; first match. Missing pending documents alone do not establish this state. — Stop empirical progression and report the precise measurement or cohort boundary; no causal or null finding.
- **scope_fs:** All shared Stage-0/pre-IPA prerequisites are frozen and common Stage-B requirements cleared; observed custodial release linkage <90%; source-contingent F+S registration is documented before treated contrasts. — Use F+S for H1; preserve all feasible C analyses as exploratory and disclose the linkage rate.
- **scope_fsc:** All shared prerequisites and Stage-B requirements cleared; observed custodial release linkage ≥90%. — F+S+C is the registered pooled scope; diagnostics do not prove identification.
- **otherwise:** otherwise — Required evidence remains unresolved; no downstream authorization from assumed availability.

atom-000002

What anniversary pattern occurs in the source never-disclosed traffic-fine arm before any treated-arm estimate is inspected?

Activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs")

- **boundary:** After authorized execution, required T battery cannot be scientifically obtained due to an evidenced source-defined measurement/estimability boundary. — Archive all available pieces and reason; the archive-first prerequisite is not satisfied.
- **archived_positive:** Required T battery and its specified non-gating band are complete and immutably archived before treated-arm output; delta_T>0 and two-sided p_T<0.05. — T has a significant positive pseudo-date jump. Estimate H1/F next; no F-relative kill comparison is yet possible.

- **archived_other:** Required T battery and band are complete and archived; not($\Delta_T > 0$ and $p_T < 0.05$). — Archive the sign, CI and smoothness profile without accepting a zero effect; proceed to H1/F regardless of favorability.
- **otherwise:** otherwise — Partial or ambiguous T evidence is reported; complete archive-first requirements remain unresolved.

atom-000003

Does reaching the scheduled private-certificate clearing date change the monthly employee-job-finding hazard?

Activation: `(state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs") AND (state(atom-000002) == "archived_positive" OR state(atom-000002) == "archived_other")`

- **both_kills:** Complete main and comparator contrasts: both K_T and K_P defined below are true; first-match precedence. — Both falsifications fire. Report all estimates with descriptive/associational ceiling.
- **traffic_kill:** K_T is true and previous region does not apply. — Withdraw causal interpretation; report the positive, negative or nonsignificant main result and placebo evidence.
- **anniversary_kill:** K_P is true and previous regions do not apply. — Design failed its within-cohort falsification; retain all estimates and withdraw causal interpretation.
- **negative:** Both kills evaluated false; $\Delta_{\text{main}} < 0$ and two-sided $p_{\text{main}} < 0.05$. — Contrary to H1; negative effect disconfirms the predicted increase and is never relabeled supportive.
- **supported_sensitive:** Both kills false; $\Delta_{\text{main}} > 0$, $p_{\text{main}} < 0.05$, registered A2 gate G01 true, but G05 false. — Source H1 support under A2 depends on the screen amendment. Report mandatory original-screen contrary disposition beside it; retain claim caveats.
- **supported_stable:** Both kills false; $\Delta_{\text{main}} > 0$, $p_{\text{main}} < 0.05$, G01 and G05 true. — H1 is supported under both screens, within maintained assumptions and the narrow source claim ceiling.
- **bounded:** Both kills false and $p_{\text{main}} \geq 0.05$ (either sign, including zero). — Report the 95% upper CI bound; no evidence of the predicted increase, no accepted null or proof of persistent-trait causation.
- **not_supported:** Both kills false; positive $p_{\text{main}} < 0.05$ but G01 is false. — H1 is not supported. Gate failure without a positive-significant magnitude violation is not automatically design failure.
- **otherwise:** otherwise — Main/comparator evidence or a necessary claim adjudication is unresolved; report estimates available, no causal support.

atom-000004

Do the source job-finding contrasts follow sanction-specific clearing horizons and custodial anchors?

Activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs") AND (state(atom-000002) == "archived_positive" OR state(atom-000002) == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) == "no_result")

- **partial:** At least one schedule component is scientifically reportable but some required component or multiplicity decision is unresolved/unavailable. — Report every available contrast with component-specific directions and CIs; full migration adjudication is unresolved, not null.
- **mixed:** All components and family decisions available; at least one source-predicted contrast significantly positive and at least one significantly negative under the source family rule. — Exploratory evidence is discordant; preserve each contrast, no pooled directional summary.
- **contrary:** All components/family decisions available; at least one contrast is significantly in the non-predicted direction and previous regions do not apply. — Report exploratory disconfirmation for that component without upgrading or overturning H1.
- **corroborating:** All components/family decisions available; H3a and H3b positive with Holm-adjusted $p < .05$, and no previous region applies. — Exploratory migration corroboration; explicitly report the H3c/E7 anchor pair, including anniversary-suspect patterns.
- **uninformative:** All components/family decisions available; H3a or H3b not significant; no prior region applies. — Migration is uninformative at the source planning power; report CI bounds, not evidence against migration.
- **otherwise:** otherwise — No coherent schedule judgment is resolved; unavailable components are not zeros.

atom-000005

Are hiring changes concentrated in the source certificate-screening classes, including its public-certificate comparison?

Activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs") AND (state(atom-000002) == "archived_positive" OR state(atom-000002) == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) == "no_result") AND (done(atom-000004) OR terminal(atom-000004) == "no_result")

- **reporting_boundary:** Observed certificate-intensive hires < 1000 or any cell required for theta violates the source disclosure minimum; H2 not estimated by source rule. — Report only permitted descriptive H2 composition; record E4 independently if source requirements allow, without an H2 gradient claim.
- **partial:** Some source H2/E4 components are reportable but others or their multiplicity adjudication are unavailable/unresolved. — Retain estimates component by component; no completed industry signature claim.
- **negative:** Full required evidence and multiplicity available; $\theta < 0$ and source Holm decision significant. — Exploratory disconfirmation of the employer-screening signature; E4 pattern remains separately reported.

- **positive:** Full required evidence and multiplicity available; $\theta > 0$ and source Holm decision significant. — Exploratory concentration signature, qualified by the complete E4 ordering; mechanism at most consistent-with.
- **not_detected:** Full required evidence and multiplicity available; θ not significant. — Signature not detected; weakens employer-side attribution without accepting equality.
- **otherwise:** otherwise — Industry evidence remains unresolved; report all available coarse composition and reasons.

atom-000006

Do already-employed record holders change workplaces toward certificate-screening destinations around scheduled clearing?

Activation: `(state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs") AND (state(atom-000002) == "archived_positive" OR state(atom-000002) == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) == "no_result") AND (done(atom-000004) OR terminal(atom-000004) == "no_result")`

- **partial:** One E6 component is reportable but destination/other required component or family decision is unresolved. — Keep mobility and directed-destination evidence separately; no completed worker-side signature claim.
- **reported:** All registered E6 components and family decisions are available. — Report signs, CIs and significant opposite-direction evidence separately; worker-side attribution remains exploratory and non-unique.
- **boundary:** An evidenced source measurement/coverage boundary prevents every E6 component. — No mobility estimate; this does not erase H1 or the industry module.
- **otherwise:** otherwise — E6 remains unresolved, not a statistical null.

atom-000007

How do the source post-clearing hires, their durability and annual wages compare with the pre-clearing period?

Activation: `(state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs") AND (state(atom-000002) == "archived_positive" OR state(atom-000002) == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) == "no_result")`

- **partial:** At least one E1/E2/E3 component is reportable but another or the job-quality family decision is unresolved/unavailable. — Report each available outcome and missingness reason; no composite quality score.
- **reported:** All registered job-quality components and family decisions are available. — Report outcome-specific estimates, CIs and any discordant directions as exploratory associations.
- **boundary:** An evidenced measurement or coverage boundary prevents every E1-E3 component. — Job quality cannot be evaluated within this scope; no null finding.
- **otherwise:** otherwise — The module remains unresolved; no implication for H1.

atom-000008

Does the source job-finding contrast differ between registered unemployment or activation and other non-employment?

Activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs") AND (state(atom-000002) == "archived_positive" OR state(atom-000002) == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) == "no_result")

- **partial:** At least one E5 state contrast is reportable but the other or their difference is unavailable. — Report state-specific evidence and missing comparison; no concluded benefit-clock explanation.
- **reported:** Both state contrasts and their registered Wald difference are available. — Report all signs and CIs as an exploratory audit; no new threshold or causal mechanism decision.
- **boundary:** Evidenced PTI mapping/coverage/estimability boundary prevents every E5 target. — Benefit-clock audit unavailable; no evidence of an absent confound.
- **otherwise:** otherwise — Benefit-state decomposition remains unresolved.

Final technical review

- Verdict: ready_for_transcription

Existing protocol converted to a native epistemic graph. No independent scientific acceptance or empirical execution is claimed. Native manifest acceptance records compiled/frozen packaging only.

Checks

- artifact_contract: pass

Issues

Independent checks

No independent scientific review performed; consult the source audit and conversion self-audit.

Source-protocol conversion self-audit

Conversion date: 2026-09-05. Source registration date: 2026-08-21. Exact conversion timestamp and all eight original source hashes are in the byte-identical supplied source-provenance.yaml. This is SOURCE-PROTOCOL conversion of an existing unpublished preregistration, not replication of an already published empirical paper. No independent reviewer has accepted this conversion. The source audit's historical verdict does not constitute acceptance here.

Inspection and fidelity

All four required skills and their required package, granularity, paper and adaptive-foundations references were read completely. The supplied replica-author resource manifest, current all-FSV boundary, resource map/classification and schema guide were read. All eight files listed in source-provenance.yaml, plus the YAML itself, were read completely, including the full report, execution plan, audit and three code files. All listed SHA-256 values matched. The R skeletons and power simulation were inspected only; none was run, imported or used to obtain new scientific results.

The conversion preserves source H1 alone as confirmatory, two-sided Wald alpha 0.05 and person CR1 uncertainty; A2’s literal 2.576 screen and mandatory 1.96 sensitivity; both signed source magnitude kills; all source hypotheses, estimands, forecasts, checks, contingent variants and displays. H2/H3/H3c and E1-E7 retain exploratory status. Source A1-A4 are distinguished from newly authored format/graph translations. The complete mapping is in target-inventory.md, with grouping and dependency reasoning in source-map.md.

The source historical legal table, offence lists, final-instance rankings, exact runtime coordinates, selected source-silent statistical implementations, full scripts and editorial-adjudication evidence remain unresolved. Their exact scope is recorded in U01-U15 of data-contract.md and the deviation ledger. No historical vintage, source-silent power input, new correction, extra robustness test or outcome was invented. The audit’s proposed fixes were not treated as amendments. Current police guidance is explicitly not proof of historical coverage, and the original NOTE is not proof of current runtime access.

Structural and logical validation

The repository’s current `prereg_lane.package.validate_package` with `require_paper=True` and the supplied allowed-table set passed, as did pristine native `read_bundle(..., birth=True)`. Root content is exactly atoms/, molecules/, prereg/. Eight Atom files exactly match the complete ordered Molecule membership and manifest. Mode is adaptive, status is draft, and all empirical states/scores/evidence are unfilled. Every activation reference and result key is valid, graph dependencies are acyclic, and at least the shared scientific validity unit is initially active. Compatibility ratings are explicit non-evidentiary format placeholders, not a scientific novelty or feasibility assessment.

An additional 143 synthetic logic cases passed. They verify unknown initial evidence, both F+S+C and F+S scope routes, progression to H1 after either sign of complete archived T evidence, no suppression of later registered analyses after any H1 support/negative/kill/non-support state, source-permitted completion-or-no_result ordering, shared-boundary blocking, no main activation from partial T archival, and three-valued NOT/done behavior. H1 activation refers only to the shared validity and prior T archive, never to a comparison requiring H1/F estimates that do not yet exist. The source T/F and placebo/main gates are post-estimation claim restrictions inside H1 and Molecule interpretation.

The coverage check found every named source hypothesis/additional estimand, all seven Stage-B checks, T1-T10 and F1-F6 in the inventory. The manuscript contains 33 unique unfilled result slots, all bound to registered logical outputs and reporting rules; figure-caption slots resolve to that map. All eight Atoms have explicit narrative dispositions, including partial, boundary, unactivated and operationally failed outcomes. Figure output filenames map to owning Atom protocols. These checks establish internal consistency, not historical law, runtime availability, estimability or scientific identification.

Figure-template validation

Six implemented source-specific render templates use the native `render(tables, output, *, width_mm=130.7, style_dir=None)` interface and a reusable author-owned helper. They load no empirical data, fit no model and estimate no substitute series. Available coefficient rows require complete finite registered confidence limits. Event panels require all 43 registered month positions with explicit unavailable rows, or a whole-panel unavailable marker; silent omission is rejected. Hazard and density inputs use source fractions, with display-unit conversion only. Source unavailable classes/arms remain visible with their exact explanations.

All six templates passed complete, partially unavailable and all-unavailable synthetic rendering at 130.7 mm: 18 render cases, plus three rejection cases for missing uncertainty, silently omitted bins and missing named input, for 21 cases total. Long unavailable explanations were tested and their full terminal text confirmed in the PDF text. The partial industry and balance cases were visually inspected. The shared source layout was revised to separate notes from axes and panel titles and to use a common hazard/density scale spanning every available input. Synthetic values, PDFs, raster inspections and test logs remain solely in permitted source-inspection scratch, never in this World or any manuscript result slot.

No host-owned registration or paper PDF was compiled. Synthetic plot rendering is an interface test, not execution of empirical code or generation of study results. Transcriber and host retain compilation/sealing responsibilities.

Privacy, source scope and handoff limitations

The World contains no private original source file, inspection cache, source R/power script, microdata, empirical output, synthetic result array, PDF preview or image. A byte-hash comparison confirms no World file is one of the eight original private source files. The one exact provenance YAML copy is the user-requested metadata exception. Public search used only generic legal concepts and published titles; no private source text was uploaded. Queries, URLs, short supporting quotations, retrieval dates and access limits are in literature.md. No external system was changed, person contacted, commit/push/release performed or data application submitted.

The legacy docs/replication/ directory is the designated audit slot. Host rendering code currently uses that directory's presence to select generic published-paper replication wording. That wording would be incorrect here: the Transcriber must preserve the explicit source-PROTOCOL distinction and must not claim the source paper's

results are known. This is a disclosed format-handoff concern; no host or resource code was modified by this author.

This draft is structurally validated and complete as a faithful conversion with explicit unresolved source requirements. It is not execution-ready until its source-required pre-data gates are met, and it has no independent scientific acceptance. Neither format validation nor eventual PDF compilation closes those gates.

Amendments, conflicts and engineering translations

This ledger documents a SOURCE-PROTOCOL conversion, not empirical replication or an authorized redesign. It distinguishes changes made in the original registration from this converter's format translations. No independent reviewer has accepted this work. Source registration date 2026-08-21 and conversion 2026-09-05 are distinct; none of the original amendments is described as preregistered in the earlier binding design.

Explicit source amendments (not new converter decisions)

Source-preserved A1

id: A1

date: 2026-08-21

what: Demote-and-narrow fixed-point cascade adopted in place of the binding design's mandated Stage-A project stop.

original rule: The binding Stage-4 design's Stage-A stop rule read: "if H1 or H3a remain < 0.95 after widening, do not register (project stop)". Its pre-registered responses to a power shortfall were limited to H3c's own power gate and the contingent demotion of H2.

trigger: The executed Stage-A simulation put H3a at 0.6625 (< 0.95), and the pre-registered cohort-widening remedy (+22% N) cannot close the gap; the original rule therefore mandated stopping the project.

amended rule: Family fixed-point iteration demoting the weakest test at each step with N and the DGP unchanged (only the family alpha moves): H3c demoted by its own pre-registered gate; H3, then H2, demoted by iteration; final confirmatory family {H1} at alpha 0.05; H3 (including H3a's confirmatory role) exploratory; claim ceiling narrowed accordingly. Adopted at power-simulation time — after the power results were seen, before registration, before any data access.

rationale: H1's disconfirmation capacity does not derive from H3a's confirmatory power: it is carried by the placebo-anniversary and arm-T gates, whose false-firing rates are alpha-bounded (and whose detection rates against calibrated violations are now simulated in the deposited script). Demotion-to-exploratory before registration preserves every estimate while honestly narrowing the claim.

adjudication: Submitted for Stage-1 editorial adjudication; if the editor rejects the amendment, the original stop rule stands and the project does not register.

Source-preserved A2

id: A2

date: 2026-08-21

what: Placebo-screen alpha inside the H1 support rule moved from 0.05 to 0.01 ($|z_{\text{plac}}| < 2.576$ instead of 1.96). Not described as a “tightening”: the two effects run in opposite directions.

justification independent of power: Under a true-null placebo a 0.05 screen falsely blocks H1 support 5% of the time purely by construction, structurally capping any support rule at $1 - \alpha = 0.95$ — exactly the registration bar; the 0.01 screen caps the structural false-block rate at ~1% (simulated false-block under the true null: 0.0508 at 0.05 vs 0.0117 at 0.01). This is the registered justification and stands independently of any power target.

cost stated plainly: The stricter significance standard for the placebo makes the gate MORE permissive under real placebo anomalies: an anomaly with $1.96 < |z_{\text{plac}}| < 2.576$ that would have blocked H1 support under the 0.05 screen now passes the significance screen, and the placebo KILL requires $|z_{\text{plac}}| > 2.576$ to fire. At the calibrated violation (true placebo jump = half the floor; scenario V1): kill fires 0.472 (0.01 screen) vs 0.488 (0.05); support blocked 0.686 vs 0.842. The unchanged magnitude clause ($|\delta_{\text{plac}}| \geq 0.5 \cdot \delta_{\text{main}}$ renders H1 not supported) carries most of the residual protection.

disclosed motive: The amendment also lifts the joint support power from 0.9492 to 0.9883, over the 0.95 registration bar; both motivations are recorded, not only the favorable one.

sensitivity precommitment: Stage 2 MUST report the alpha-0.05-screen version of the gate (pass/fail and implied verdict) as a mandatory sensitivity next to the registered gate.

Source-preserved A3

id: A3

date: 2026-08-21

what: Arm-T sanction screen: AFG_FRAKKOD added to the frozen Crime - decisions extraction; traffic fine decisions with AFG_AFGTYP3 = 219 (fine plus licence disqualification, retained in the Criminal Register per DST documentation), any disqualification recorded in AFG_FRAKKOD, or any custodial element are excluded from arm T and counted in the sample-flow table.

rationale: Disclosure of Road Traffic Act cases on the private certificate is sanction-contingent: fines accompanied by disqualification or a custodial element DO enter the straffeattest and clear on their own clock. Without the screen, contaminated arm-T members would experience a genuine clearing event at the 24-month pseudo-date, biasing the arm-T kill gate toward falsely withdrawing a true H1 and corrupting exploratory H3a and the TOST band. The Stage-0 memo must encode traffic disclosure by sanction, not offence code alone.

Source-preserved A4

id: A4

date: 2026-08-21

what: Appeal-rule operationalization: JOURNR (police case journal number) and AFG_AFGRETKO (deciding court or police district) added to the frozen Crime - decisions extraction, and JOURNR to the prison- admissions extraction, so the final-instance rule is executable as written: same-JOURNR decision rows ordered by instance (AFG_AFGRETKO) and date; the latest final-instance row's AFG_AFGOEDTO governs; arm-C decision-to-admission linkage runs primarily on PERSON_ID + same JOURNR with the person-level 8-year window as fallback.

rationale: Without a case identifier the registered appeal rule could not be executed from the frozen variable list, leaving analyst discretion over final-instance linkage to Stage B — exactly what an RR must not permit.

Explicit conflicts and incomplete requirements

Issue	Evidence and governing disposition
Historical Stage0 completion	Plan §6 says Stage0 executed/frozen; final YAML timeline, report and skeleton FREEZE fields say not done. Preserve hard pre-IPA gate; do not treat plan as deposit proof.
Amendment provenance	Plan calls A2 tightened and cascade settled; final A1/A2 explicitly disclose design-stage amendments after planning power. Preserve cost/motive/editorial-adjudication condition.
Source estimation family	Power script header initially lists H1,H2,H3; final YAML H1 alone governs. No new cascade runs.
Power screen and label	Script Z_PLAC still.05 and .01 block labeled diagnostic/worth considering; header now says superseded but incorrectly attributes screen change to A1. YAML A2 governs. .920/.756 support sensitivities are old-screen values, not new-screen calibration.
Both-gate power	YAML .9883 'support' refers Wald plus within-cohort gate, not all T/quality/legal gates. No claim that complete graph support power is .9883.
Widening assessment	+22%N was analytic extrapolation, not a script scenario. No new simulation/inputs are authorized.

Issue	Evidence and governing disposition
Missing A3/A4 in plan	Plan D1/S1 omit JOURNR,AFG_AFGRETKO,AFG_FRAKKOD; D2/linkage omit JOURNR; plan T classification lacks sanction screen. Final YAML A3/A4 and extraction skeleton control.
Final-instance order	report asserts AFG_AFGRETKO distinguishes instances; audit finds value labels garbled and skeleton has rank FREEZE. Preserve exact missing rank/case-version gate U03, not a numeric ranking guess.
Court dates and conviction histories	Plan builds single-conviction rows before appeal resolution; final YAML requires histories plus appeal rule but does not disambiguate duplicate appellate rows as crimes. No silently invented collapse; U03 holds exact construction.
Legal coverage claims	Current police guidance is explicitly traffic issuance-after2022 and does not validate the source claim that all fine+disqualification cases enter a private certificate, or the historical drugs-fine list. Source A3 stays frozen; U01 records the unresolved historical conflict, no current-law rewrite.
Reset law	Source assumes a new conviction resets disclosure and asks reset-clock bounding. Neither current lookup nor source supplies full historical rule. Preserve target and U01/U11 rather than claiming verified reset behavior.
Guaranteed coverage	YAML expected_n_basis/plan say validity guarantees observability. Current fields/release horizons do not guarantee all needed years/bins. Preserve source exclusion/constant-composition rules and report known coverage concern; never assert actual completeness.

Issue	Evidence and governing disposition
Key attribution	Source PERSON_ID is a logical person key, not verified in every HKV file; current FSV lists PNR. U04 requires actual pseudonym crosswalk, not key-name equality.
Censoring/death	Source uses CPR exit for death; CPST/VAN_VFRA do not cover required period and quarterly BEF exit is not exact death. U05 remains; no new register substitution/outcome.
Missing DOB conflict	Source age18-55/age60 rule needs DOB, but missing-data rule says no main exclusions for missing DOB. Neither eligibility inference nor imputation/drop rule is invented; U05.
Left-censored spells	Source FE requires duration1-36,37+, no rule for spell ongoing at BFL start. Audit proposes37+/censored or new bin but source never adopts it. U06, no repair.
Month-start timing	Inclusive BFL interval admits employed status on a job's first day, including month-start jobs. Literal source rule preserved; no new strict inequality.
Source TOST band	Source LPM contrast plus undefined tightest hazard-ratio90%band; no exact transform/margin. Preserve one non-gating target under U07. Rejected runner-up bound cannot fill it.
Kill versus non-support	Broad falsification sentences call all placebo failures design failure; explicit H1 rule only makes positive-significant $\geq$ half-main placebo a kill. Preserve narrower explicit rule and report non-support separately.
Kill timing	A T/F comparison cannot precede F. Source plan4.1 says estimated first, evaluated later. Graph archive-first only, post-estimation comparisons inside H1; never suppress main based on that same comparison.

Issue	Evidence and governing disposition
Source signed thresholds	Gate compares with signed <code>delta_main/delta_F</code> . Keep <code>p</code> and sign clauses, strict versus inclusive boundaries and first-match kill precedence; no <code>abs-denominator</code> or <code>epsilon</code> invented.
E5/E7 audit allegation	Audit re-audit describes old <code>{E5,E7}</code> wording; supplied final YAML E5 explicitly singleton uncorrected and E7 corrected in schedule. This conflict is resolved by final source, not a new multiplicity choice. Garbled report/plan sentence does not reopen it.
Unfinished multiplicity	Despite named family resolution, E1/E4/E6/E7 multi-outcome counts, overlapping release targets, H2 <code>adjustedCI/p</code> rule and missing members lack exact specification. U09 remains, no novel correction.
Industry and certificate scope	Frozen H2 says transport; operational list only taxi49.32. Retain narrow list; historical statutory grounds unfinished. E4 authority sectors absent; audit child-certificate concern does not authorize excluding85/88.91.
Industry missingness	>5% rule explicit, <=5% and E4 three-way missing assignment incomplete; U08. Missing coefficient cannot be codedzero.
F4 model display	Source F4 names cause-specific hazards but feeds from T7 models without a level transformation. Preserve an unresolved display-mapping gate; no raw-mean substitute or fitted-level reconstruction invented. H2/E4 estimates retain separate dispositions.
Workplace coverage	Source says <code>AJO_ARBNR_SENR</code> available over window; FSV lists only through201712. U10 no silent replacement field, no new mobility definition.

Issue	Evidence and governing disposition
Quality rules	E1 says winsorized hours; outlier rule only specifies >400 missing and wage/income winsorization. First-full-month, zero log wages, E3 censored ends and missing annual years not specified. U12 no default or extra test.
PTI priority	Plan S12 promises UI/activation priority in analysis script; skeleton does not implement it or provide exact codes. OF July2017 code change reinforces need for U13.
Routine variant precision	Donut trigger measurement, exact matching/reweighting, source rounding.167 versus 2/12, equality.10 and heterogeneity family are unfinished. U11 no invented statistical method/cutoff.
Disclosure aggregation	Source numeric floors retained; exact collapse order is absent. U14 does not authorize data-driven bins/sector regrouping that changes analysis.
Historical audit freeze allegation	Audit says commit placeholders unstamped; supplied YAML/report actually carry aa65f6764ddf. Record historical allegation as stale.
Bibliographic versions	YAML Prescott/Starr2019 versus report2020; publisher verifies2020 publication. Retain inherited version discrepancy without claiming source silent revision history. Other year variants remain inherited/unverified.
Missing deposited-file claims	Source mentions power_stdout/access statement/full fallback as deposited in places; they are absent from supplied provenance set (which was read fully). No copy, recreation or assurance of existence.
Misdating/selection certainty	Source claims attenuation-only and that level selection cannot manufacture discontinuity. Preserve as maintained assertions/limitations; metadata and gate survival do not prove them.

Issue	Evidence and governing disposition
Source forecasts versus findings	Frozen forecasts/planning outputs are not observed empirical evidence. Preserved with labels; no numerical results in manuscript slots.

Newly authored engineering translations

Eight scientifically meaningful Atom units and final IDs; complete Molecule membership; three-valued acyclic Boolean activation; explicit first-match state partition with otherwise; component availability ledger; operational no_result/not_activated separate from statistical states; source-to-FSV candidate mapping with unresolved crosswalks; logical aggregate output filenames/columns; manuscript result slots; six figure render interfaces and missing-input explanations; derived conceptual DAG. These are conversion/format engineering, not original source preregistered decisions. No new scientific hypothesis, method, cutoff, robustness test, outcome, historical legal vintage, power assumption or multiplicity fix was introduced. Main/H1 routine-variant completion before schedule is a conservative scheduler detail, while source T->H1->schedule->mechanism target order remains intact.

All raw source hypotheses/estimands and authorized variants have a native owner or explicit source-supported non-adoption in target-inventory.md. Original private files/caches remain outside the World. Structural validity or eventual PDF compilation cannot establish independent scientific acceptance or settle any gate above.

Source-PROTOCOL conversion map

This is conversion of an existing unpublished preregistration, not replication of an already published empirical paper. No independent reviewer accepted this conversion. Original source registration date2026-08-21; conversion timestamp2026-09-05T13:08:14.415348+00:00. The source directory and SHA-256 values are preserved exactly in source-provenance.yaml; private original files are not copied.

Complete source inspection

Every file in inputs/source-provenance.yaml, and the provenance YAML itself, was read completely as text; code was inspected, never run. All eight listed file hashes matched the supplied values. The YAML is the original scientific authority; other documents' asserted completeness is not evidence of existence or runtime usability.

Source	Role and fidelity
NOTE.md	Deposit/source chronology and authority declaration. Old upload-list limitation is historical; current boundary permits all FSV for planning. No claim of current mounts.
prereg.yaml	v1.0 created 2026-08-21, commit aa65f6764ddf, Stage1. Governing scientific definitions, hypotheses, amendments, gates, power history and all targets were extracted into native protocols/shared documents.
report.tex	Full Stage1 narrative, design table, limitations and bibliography inspected. No raw original or converted private report copied; manuscript newly authored from source-supported content, results unfilled.
execution_plan.md	Full S1-S14 pipeline, T1-T10, F1-F6 and order/clearance instructions inspected. A3/A4 and incomplete Stage0 status from YAML override stale plan. Logical output interfaces translated; no supplied runtime paths presumed.
audit_report.md	Full initial/re-audit findings and revisions inspected. Concerns logged with version scope; suggested new child-sector exclusion, duration coding fix and new power scenarios not adopted. Final minor_revisions is historical self-audit, not acceptance of this conversion.
extraction_skeleton.R	Full NULL/FREEZE sections inspected; confirms unfinished legal tables and instance rank. Skeleton not runnable and not evidence that full extraction script exists.
analysis_skeleton.R	Full estimator/contrast stubs inspected; confirms CR1 LPM, order and source gates. Full code remains pre-IPA requirement.

Source	Role and fidelity
power_simulation.py	All606lines inspected, never imported or executed. Historical planning DGP/outputs traced, stale baseline screen and misattributed amendment label recorded. No simulation file or cached inspection content deposited in World.

Scientific unit map and granularity reasoning

Native identity	Source analysis coverage	Boundary rationale
atom-000001	Shared legal-clock/cohort judgment; population/data/preprocessing; all seven Stage-B checks; T1-T3,F5-F6	Consequential validity shared by every experiment. Appendices, joins, checks and documentation stay internal; no administrative Atom per gap.
atom-000002	Never-disclosed T battery, pre-window profile, G4 order and G9 non-gating band; T5 and T contributions to F2/F3	Independent comparison population and shared falsification evidence estimated first. Its relative-to-F kill is deliberately not an input to obtaining F.
atom-000003	H1/H0, pooled and F/S/C profiles, within-cohort placebo, both claim kills, A2 sensitivity and all H1 routine sensitivities/heterogeneity; T4,T10,F1 and treated F2/F3	One main scientific experiment with full diagnostics. Individual models, windows, checks and figures are not Atoms; H0 is a bounded interpretation of H1.
atom-000004	H3a,H3b,H3c,E7, T6 and custodial anchor reading	One coherent schedule-migration module; C gaps cannot erase independently reportable F/S contrasts. Shared released-arm estimates are referenced, not a duplicate experiment.

Native identity	Source analysis coverage	Boundary rationale
atom-000005	H2/E4, source binary/three-way industry predictions, division84 and missing-industry columns; T7/F4	Same hiring-proxy question; refinement/sensitivity internal.
atom-000006	E6 employed-worker workplace mobility/destination interaction; T7	Distinct already-employed population and worker-search question, independently interpretable even when H2 blocked. Shared mechanism correction is not a reason to erase the scientific distinction.
atom-000007	E1 hours/logwages,E2 annual wage,E3 durability; T8	Source job-quality module with explicit separate measures and partial-result states; no arbitrary aggregate score.
atom-000008	E5 PTI benefit-state levels and difference; T9	Distinct exploratory audit of benefit-clock confounding; not a generic routine check or new confirmatory causal claim.

Dependency reasoning

Activation source is each Atom's registration, not this map. Start atom1 with TRUE: it owns the scientific common-validity assessment, while missing pre-data definitions keep evidence pending. scope_fsc/scope_fs can only be realized after actual authorized verification. Atom2 needs that scope; atom3 needs that scope AND completed archived T evidence of either sign. The source $T \geq .5F$ comparison is evaluated inside atom3 only after delta_F exists. The same applies to $\text{abs}(\text{placebo}) \geq .5\text{main}$. Thus there is no main->placebo-comparison->main cycle. No positive/support state conditions exploration.

Atom4 follows completion-or-no_result of the H1 attempt, atom5/6 additionally follow completion-or-no_result of schedule, preserving schedule-before-mechanism estimation. Atom7/8 follow the H1 attempt without an unsupported relative order among Stage-D exploratory families. Every downstream expression also retains the source common-scope and T-archive requirements. Source Stage-D no-stop permits otherwise feasible registered exploration after an attempted component failure; it

does not override Stage-B stops or authorize re-estimating a failed predecessor. Routine variants stay internal in atom3; their conservative completion-before-schedule placement preserves locked target order and is a disclosed engineering scheduling translation.

All 8Atoms are members from birth. The graph is a DAG and reconverges: source-scope AND Tarchive AND predecessor completion conditions combine. State-dependent scope produces genuine evidence-contingent eligibility, while within-Atom gates retain precise cutoffs. Distinct local components and flags prevent a simplified graph from hiding mixed or partial evidence. No source threshold or family was chosen merely to fit graph grammar.

Complete source-target inventory

SOURCE-PROTOCOL conversion, not published-paper replication. Source locators refer to prereg.yaml unless explicitly another file. Only atom-NNNNNN identifiers own graph identity. Target labels are traceability, not competing nodes. All empirical slots remain unfilled. Every unavailable item remains visible with its exact pre-data requirement; no unpublished outcome is inferred.

Target	Native owner	Source locator	Disposition
H1	atom-000003	hypotheses[H1];analysis	Not confirmed, or main and placebo quantities; source state-ment/forecast retained
H0	atom-000003	hypotheses[H0];interval	Not confirmed, interval, not separate test/Atom
H2	atom-000005	hypotheses[H2]	Exploratory theta, bootstrap999, industry/cell gate, mechanism Holm unresolved component details
H3	atom-000004	hypotheses[H3]	Exploratory migration, frozen state-ment/forecast retained; not a fourth confirmatory claim
H3a	atom-000004	hypotheses[H3].primary	Not confirmed, difference

Target	Native owner	Source locator	Disposition
H3b	atom-000004	hypotheses[H3].primary_quantity	S36-S44 within-person covariance
H3c	atom-000004	additional_exploratory_releases[H3c]	planning gate already fired
E1	atom-000007	additional_exploratory_releases[E1]	hours rule narrow wage; hours rule conflict retained
E2	atom-000007	additional_exploratory_releases[E2]	Annual LOENMV_13 within-person two years after vs before
E3	atom-000007	additional_exploratory_releases[E3]	180-day hands of pre/post hires
E4	atom-000005	additional_exploratory_releases[E4]	Three-way proxy/public- certificate located null; division84 exclusion
E5	atom-000008	additional_exploratory_releases[E5]	On/activations versus other; singleton audit test, uncorrected
E6	atom-000006	additional_exploratory_releases[E6]	Already made workplace change and destination interaction
E7	atom-000004	additional_exploratory_releases[E7]	Do the same release reused, exact tested family unit unresolved
within-cohort placebo	atom-000003	H1.primary_quantity[1:17]-{18:13},abs(z)<2.576	and magnitude; positive-significant kill separate
arm-T battery	atom-000002	estimation_order_1624C	coefficients/profile/delta; archived before treated

Target	Native owner	Source locator	Disposition
arm-T/F kill	atom-000003	H1.kill_criterion	After T and F estimates: significant positive T>=.5F; claim-only restriction
TOST band	atom-000002	Graft9;analysis_pla	On estimator non-gating90% hazard-ratio interval; construction unfinished U07
A2 old-screen sensitivity	atom-000003	amendments[A2]	Mandatory1.96 gate result beside2.576 result
Anticipation/donut	atom-000003	contingent_decisions	[interception] below -6:-4 at.05; add+1:+6 minus-6:-3, keep primary
Person FE	atom-000003	estimator;timelineD	Source variant retained, not primary
Matched T	atom-000003	contingent_decisions[level difference]	Tfactor baseline mismatch; exact KOEN x5y age xdecisionyear matching; original kill unchanged
Constant composition	atom-000003	contingent_decisions[end]	IFLObservable[24:+12] if+18truncated
Date-heap exclusion	atom-000003	contingent_decisions[heap sing]	56% sing threshold; foreground change of sign/significance
Composition reweighting	atom-000003	outcome_neutral_cke	10.6[6] smoothness; weights unfinished
Reconviction reset bound	atom-000003	Graft10;contingent_ decisions	SEs[reset] divergence -> both main text, reconviction-free scope

Target	Native owner	Source locator	Disposition
KOEN/age heterogeneity	atom-000003	timelineD;executionSource	Source subgroup intent retained, exact model/family unresolved
Industry dual coding	atom-000005	contingent_decisions[50]	Industrymissing] missing->noncert primary plus exclude sensitivity
Multiple-start attributes	atom-000001/atom-000003/atom-000005/atom-000007	contingent_decisions[multiple-starts]	Final multiple-start, attributes highest hours, ties unfinished
ArmC linkage scope	atom-000001/atom-000003/atom-000004	contingent_decisions[linkage]	100%->source F+S contingency; C retained exploratory
Legal vintage branch	atom-000001	timelineStage0;contingent_decisions[legal]	Agreement decision legal exclusion and80%stop; exact memo unfinished
Cohort widening reserve	atom-000001	population;timelineStage0;contingent_decisions[legal]	2018-2019 source contingency only, not executed in A1 or by converter
Source forecasts	atom-000003/atom-000004/atom-000005	hypotheses[H1,H2,H3]	forecasts/90% intervals and source basis preserved; planning judgments only
Source power/DGP/sensitivity/V3	shared ideas/Action	power;power_simulation	Planning history, no new simulation/Atom, screen and inference approximations disclosed

Target	Native owner	Source locator	Disposition
Stage-B check1	atom-000001	outcome_neutral_checks[1]	Fact threshold/disposition in data-contract; source triggered sensitivities also owned by supporting Atom
Stage-B check2	atom-000001	outcome_neutral_checks[2]	Fact threshold/disposition in data-contract; source triggered sensitivities also owned by supporting Atom
Stage-B check3	atom-000001	outcome_neutral_checks[3]	Fact threshold/disposition in data-contract; source triggered sensitivities also owned by supporting Atom
Stage-B check4	atom-000001	outcome_neutral_checks[4]	Fact threshold/disposition in data-contract; source triggered sensitivities also owned by supporting Atom
Stage-B check5	atom-000001	outcome_neutral_checks[5]	Fact threshold/disposition in data-contract; source triggered sensitivities also owned by supporting Atom
Stage-B check6	atom-000001	outcome_neutral_checks[6]	Fact threshold/disposition in data-contract; source triggered sensitivities also owned by supporting Atom

Target	Native owner	Source locator	Disposition
Stage-B check7	atom-000001	outcome_neutral_checks	Reflex threshold/disposition in data-contract; source triggered sensitivities also owned by supporting Atom
Pipeline S1	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S1	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S2	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S2	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S3	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S3	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S4	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S4	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S5	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S5	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom

Target	Native owner	Source locator	Disposition
Pipeline S6	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S6	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S7	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S7	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S8	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S8	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S9	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S9	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S10	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S10	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S11	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S11	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom

Target	Native owner	Source locator	Disposition
Pipeline S12	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S12	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S13	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S13	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
Pipeline S14	atom-000001 plus relevant outcome Atom	execution_plan.md §3 S14	Source operational step mapped within shared construction; A3/A4 override stale definitions, no step-Atom
T1	atom-000001	execution_plan.md §5 T1	sample flow; logical outputs and paper slots registered
T2	atom-000001	execution_plan.md §5 T2	cohort and balance; logical outputs and paper slots registered
T3	atom-000001	execution_plan.md §5 T3	all seven checks; logical outputs and paper slots registered
T4	atom-000003	execution_plan.md §5 T4	H1 and A2 sensitivity; logical outputs and paper slots registered
T5	atom-000002/atom-000003	execution_plan.md §5 T5	T battery plus later F-relative claim gate; logical outputs and paper slots registered

Target	Native owner	Source locator	Disposition
T6	atom-000004	execution_plan.md §5 T6	schedule/anchors; logical outputs and paper slots registered
T7	atom- 000005/atom- 000006	execution_plan.md §5 T7	industry and employed mobility; logical outputs and paper slots registered
T8	atom-000007	execution_plan.md §5 T8	quality/earnings/durability; logical outputs and paper slots registered
T9	atom-000008	execution_plan.md §5 T9	benefit audit; logical outputs and paper slots registered
T10	atom-000003	execution_plan.md §5 T10	routine robustness; logical outputs and paper slots registered
F1	atom-000003	execution_plan.md §5 F1	pooled event coefficients; implemented paper/figures/figure1.py
F2	atom- 000002/atom- 000003	execution_plan.md §5 F2	F/S/C/T coefficients, no forecast flatness; implemented paper/figures/figure2.py
F3	atom- 000002/atom- 000003	execution_plan.md §5 F3	raw monthly haz- ards; implemented paper/figures/figure3.py
F4	atom-000005	execution_plan.md §5 F4	binary/threeway cause-specific industry hazards; implemented paper/figures/figure4.py
F5	atom-000001	execution_plan.md §5 F5	calendar-month density; implemented paper/figures/figure5.py

Target	Native owner	Source locator	Disposition
F6	atom-000001	execution_plan.md §5 F6	boundary composition; implemented
Source graft1	atom-000001	design.grafts_adopted	paper/figures/figure6.py Retained adopted_up[1] element within its scientific unit; not new science
Source graft2	atom-000001	design.grafts_adopted	Retained adopted_up[2] element within its scientific unit; not new science
Source graft3	atom-000004	design.grafts_adopted	Retained adopted_up[3] element within its scientific unit; not new science
Source graft4	atom-000002	design.grafts_adopted	Retained adopted_up[4] element within its scientific unit; not new science
Source graft5	atom-000001	design.grafts_adopted	Retained adopted_up[5] element within its scientific unit; not new science
Source graft6	atom-000005	design.grafts_adopted	Retained adopted_up[6] element within its scientific unit; not new science
Source graft7	atom-000008	design.grafts_adopted	Retained adopted_up[7] element within its scientific unit; not new science
Source graft8	atom-000006	design.grafts_adopted	Retained adopted_up[8] element within its scientific unit; not new science
Source graft9	atom-000002	design.grafts_adopted	Retained adopted_up[9] element within its scientific unit; not new science

Target	Native owner	Source locator	Disposition
Source graft10	atom-000003	design.grafts_adopted	Retained adopted up[10] element within its scientific unit; not new science

Explicit source-supported non-adoptions

The source's rejected runner-up machinery (clock-shifted comparator pool, primary cloglog, confirmatory fixed [0.95,1.05] traffic equivalence bound, cross-stratum pseudo-date matrix and post-baseline conviction-free inclusion) was not part of the chosen registration and receives no Atom or result slot. The adopted grafts above are retained. The superseded initial confirmatory family is provenance only; A1 leaves H1 alone. No unused candidate hand or new design debate is deposited. The audit's proposed extra child-sector exclusion, left-censored-duration coding remedy, and widened-N simulation were not adopted by the authoritative source and are not added here. The source-supported concern or unresolved choice remains in deviations.md. Administrative pre-IPA deposits, run/clearance logs and source forecast scoring are obligations, not scientific experiments.

Coverage verification scope

Inventory includes every hypothesis, additional estimand, source-grafted target, shared check, contingent analysis, exhibit T1-T10/F1-F6 and planning-simulation module. Related panels/specifications are kept inside coherent units. The mapping is coverage evidence, not authority to estimate a source-silent contrast. No planned estimate is dropped because it is unfavorable or underpowered; underpowered targets retain their exploratory labels and uncertainty reports.

Execution supplement

Frozen record-clearing study: reference execution

This is pre-data engineering of the eight existing adaptive Atoms. It does not resolve the source's U01–U15 scientific gaps, constitute editorial acceptance, or supply observations. Source authority is the original `prereg.yaml` v1.0, 2026-08-21, commit `aa65f6764ddf`, as incorporated into the native registrations. No Atom, Molecule, paper, source audit or fixed figure has been changed.

Entry point and environment

```
/home/shaoerzhuo/anaconda3/bin/python -B run.py --help
/home/shaoerzhuo/anaconda3/bin/python -B run.py \
  --atom atom-000003 --world /ABSOLUTE/READ_ONLY/WORLD \
  --inputs /ABSOLUTE/GOVERNED/inputs.json \
  --output /ABSOLUTE/WRITABLE/NEW_ACTION_OUTPUT \
  --dispatch-policy activation_respecting
```

Run from a copied `docs/execution/` directory in a writable action workspace. Alternatively give the absolute path to `run.py`. The World is a separate, read-only input. Outputs must be outside it, in a new or empty directory. No implicit table discovery, mount guesses, predecessor retries or installation occurs. `--help` does not read any observation file. Exit 0 includes honest pending/not-activated/no-result dispositions; inspect `result.json`. Exit 2 indicates a rejected contract, tampering, invalid binding or invalid command.

`activation_respecting` is the default. Missing evidence propagates unknown; NOT `unknown` is unknown. Native `done` is false for explicit `no_result` and unknown for an absent predecessor. `direct` bypasses only this outer expression. It still requires source pre-data prerequisites, Stage-B validity, the complete original T archive before treated estimation, and every internal scientific condition. It does not turn an incomplete T band into an archived result. Shared construction may run locally when inputs permit; it is labeled local construction and never entered as an accepted predecessor. An explicitly failed predecessor is not retried. Schedule can retain its independent decision-anchor component without reconstructing a failed predecessor's F/S/C estimates.

Tested here: Python 3.12.4, NumPy 1.26.4, pandas 2.2.3, SciPy 1.15.2, statsmodels 0.14.4, PyYAML 6.0.2, Matplotlib 3.10.0; PyArrow and PyMuPDF are also required (exact installed versions in the engineering report). R 4.1.2, fixest 0.12.1, arrow 18.1.0.1 and jsonlite 2.0.0 were available. **R 4.1.2 is below the registered R 4.3 requirement.** Numerical R calls were actually run on synthetic fixtures, but governed calls reject this version. No Stata engine or complete deposited Stata program was supplied/validated. Polars was absent; the reference adapter uses PyArrow scans and cohort-filtered BFL person chunks. Do not install into or replace the shared environment from this bundle.

`estimators.R` uses the original `fixest::feols` model and default CR1 adjustment, then normal Wald p-values and 95% intervals as required by the source's z rules. The tested default counts absorbed fixed-effect levels without a forced-exact rank correction. Explicit dummy OLS/cluster-sandwich oracles verify that choice; statsmodels is used for tests only. Event coefficients are never replaced with unadjusted window means. The omitted `-1` coefficient is a defined zero, with no test. Required missing or aliased coefficients make a contrast unavailable. The person-FE variant's exact event/calendar/person linear alias is detected algebraically; the code does not accept numerically unstable normalized estimates. Bootstrap resampling uses `R set.seed(20260818)`, 999 complete person-cluster resamples, retaining repeated sampled people as separate bootstrap clusters.

Explicit runtime input manifest

`--inputs` names a JSON file. A minimal pre-data manifest is `{"purpose":"synthetic","datasets":{},"resolutions":{}}`; this produces pending or not-activated outputs, never estimates. `purpose` is `synthetic` or `governed`. Synthetic results cannot authorize governed execution. This field is an audit declaration, not a detector of confidential data; only authorized callers may provide observation paths.

Each `datasets.NAME` entry has:

- `path`: explicit absolute path to one parquet file; no guessed storage location.
- `sha256`: SHA-256 of its exact bytes, verified when the component uses it.
- `tables`: only the frozen candidate identities KRAF, KRIN, BFL, BEF, CPST, VNDS_UD, IND, OF, restricted further to the sources of the particular input.
- `fields`: every delivered column mapped to a nonempty list of `TABLE.FIELD` source references. Example: `"y":["BFL.AJO_JOB_START_DATO"]` or `"clock_origin":["KRAF.AFG_AFGOEDTO","KRAF.AFG_ANKEDTO","KRAF.JOURNR","KRAF.AFG_AFGRETKO"]`. These are derived interfaces, not invented FSV fields. Unknown source fields or unlisted columns are rejected. `contracts.py::FIELDS` is the exact frozen candidate field set, not a newer table whitelist.
- `source_locator`: exact source construction/definition locator.
- Optional `rename`: an injective physical-to-logical mapping, e.g. `{"PNR":"PERSON_ID"}` only with the documented governed pseudonym crosswalk.

Each `resolutions.KEY` entry has `path`, `sha256`, `source_locator`, `status:"source_resolved"`, and `value`. The path points to supplied source-backed documentation, not an outcome row or a free-form assertion of availability. The bytes and locator are recorded/checked; a human still must verify that the document actually settles the stated choice. A new source-author decision must be disclosed as such, not represented as original frozen science. No missing value receives a scientific default. Unsupported resolution values are not a license to change estimators. The bundle does not execute arbitrary supplied code or formulas.

The global source documents required before Stage B are `U01_historical_law`, `U02_legal_denominator`, `U03_case_versions`, `U04_runtime_crosswalk`, `U05_spine_censoring`, `U06_extraction_freeze`, `U15_editorial_disposition`, and `full_script_deposit`. Editorial value must be `A1_accepted`; acceptance has not been established by this author. The denominator value contains `covered_expected` and `total_expected`, with nonnegative numerator positive denominator; it represents the source's frozen expected-decision weights.

Construction dictionaries/parameters, each with its own source document:

Key	Exact value interface and boundary
<code>instance_ranks</code>	Court-code string → source final-instance rank; never numeric-code ordering. Version-resolved nonappealed singleton cases need no arbitrary rank.
<code>offence_map</code>	Exact source GER7 string → <code>criminal_code</code> , <code>drugs</code> , <code>traffic</code> , or <code>other</code> ; historical validity must be established before supplying the dictionary. No new prefix ranges.

Key	Exact value interface and boundary
traffic_screen	Exact string tuple AFG_AFGTYP3\ AFG_FRAKKOD\ AFG_BSTRFLGD\ AFG_UBSTRFLG → boolean permitted-T; null is encoded <missing>. 219 is always excluded by A3. Other tuples require the frozen historical screen.
legal_vintages	List of arm,start,end,horizon_months,ambiguous; inclusive date intervals must match exactly once. Source F/T=24, S=36, C=60 months; a conflicting horizon is stopped.
BFL_coverage	Verified complete observable start,end dates. Documentation ranges alone do not supply these values. Missing/open/repeated jobs remain U06.
start_month_attributes	paid_hours_in_start_month only with source-backed BFL reduction. A compressed-job total is not presumed to be monthly paid hours; without this definition a multiple-start attribute maximum remains unresolved while binary hiring survives.
balance_categories, balance_method	Explicit source labels, field,values,label lists and source-backed binary_pooled_sd convention. No category endpoints or standardization convention are assumed.
density_threshold	Source-backed choice of exact 2/12 versus .167; absent convention leaves the gate unresolved.
F_S_contingency	Source documentation that the contingent F+S scope was fixed before treated contrasts.
Stage_B_reconciliations	Source-backed written outcome-neutral reconciliation references keyed check_name:stratum. A note that changes the science cannot supply this authorization. Both the measured quantity and reconciliation remain in the ledger.

Key	Exact value interface and boundary
DB07_format	Delivered DB07 string → documented digit representation; the binary prefixes remain 64–66,80,84,85,8891,4932.
bootstrap_percentile	R_type7 only when supported by the required source resolution. Otherwise intervals remain unresolved; tests exercise this numerical convention as a fixture, not as a new registration choice.
E4_class_map	Exact delivered code → private_screening, low_screening, public_certificate; authority-position list and any <missing> rule must come from source.
anticipation_method	Only source-resolved adjusted is implemented. Unresolved/raw trigger mechanics stay U11; no choice based on a result.
PTI_code_map, OF_complete	Code-vintage list of code,start,end,state with states UI_activation/other; completeness must be true. Conflicting overlapping states remain U13; no priority rule is invented.
hire_selection, first_full_month	Source documentation proving supplied hire rows implement the chosen source unit and actual first-full-month measurements. These are unresolved in the supplied source.
quantile_method, annual_unit	Source-backed finite-sample winsor convention (NumPy method name), and verified IND unit/vintage with value DKK/year. Another scale needs a documented mechanical input adapter, never a guessed multiplier. Fixed tails are .01/.99 within year. No realized cutpoints leave the function.

Logical data inputs:

Input	Required logical columns and source provenance
decisions	PERSON_ID, JOURNR, AFG_AFGOEDTO, AFG_ANKEDTO, AFG_AFGRETKO, AFG_KRAF 1980 through required follow-up, source-resolved delivery versions.
releases	PERSON_ID, JOURNR, IND_LOESLDTO; KRIN; earliest qualifying same-case release, otherwise person fallback, strictly after decision and 8 years. Ties stop.
spine	One row/person: PERSON_ID, FOED_DAG, KOEN, resident_at_decision, spine_at_wind BEF and the source-resolved CPST/VNDS_UD historical mappings. Last four fields are derived interfaces requiring U05; quarterly absence is not a death date.
jobs	PERSON_ID, AJO_JOB_START_DATO, AJO_JOB_SLUT_DATO plus source attributes AJO_BRANCHE07, AJO_ARBNR_SENR, AJO_LOENTIMER, AJO_SMALT_LOENB BFL. A delivered person key is mapped only after U04.
panel	Optional frozen constructed panel: PERSON_ID, arm, cal_ym, event_month, clearing_month, y, employed, optional KOEN, age_origin, source start attributes, attribute_status, heap_exclude, truncated_18, fully_observed_24_12. Provenance spans KRAF/KRIN/BFL/spine inputs and the exact construction deposit. If absent, local shared construction runs when possible.
panel_decision60	Separately constructed C decision+60 panel with the same interface. Relabeling release-event indices is invalid. S24 uses the original S-model placebo windows and covariance, not a new clock.

Input	Required logical columns and source provenance
benchmarks	Definition-aligned source checkpoint comparison: stratum,observed,expected. Published STRAF11/STRAF40 expected counts and the exact observed checkpoint definition must be documented; no new register table or historical count is supplied here.
linkage_counts	Source checkpoint component,linked,eligible, CPR component used for 95% check. Denominator must be frozen before exclusion; metadata is not a linkage observation.
hires	BFL source-resolved hire selection: PERSON_ID,event_month,year,AJO_SMALT_LOENBELOEB,AJO_JO First-full-month source definition is required for wage analysis. Missing IND does not remove these BFL components.
annual	IND PERSON_ID,year,clearing_year,LOENMV_13; person-year unique. All four years -2,-1,+1,+2 are required; clearing year omitted. No missing-year mean or zero fill.
benefits	OF PERSON_ID,PTI_TILSTAND_KODE,PTI_VFRA,PTI_VTIL; month-start inclusive interval classification with full historical codes/completeness.

The optional **evidence** object maps predecessor Atom ID to a descriptor with **path,sha256,source_locator** for that predecessor’s **result.json**. Its integrity digest, registration/material ID, source/input binding, purpose, local state and every referenced artifact checksum are verified. **archive-record.json** must contain **complete:true** and an **archived_at** timestamp before any treated launch; this bundle cannot create that completed record while U07 is missing. The native World’s mutable Atom result bodies and Molecule current interpretation are not hashed into registration identity. A separate realization digest records them. Absolute input paths and evidence locations are excluded from scientific input identity; file hashes and source definitions remain included. Checksums establish integrity and binding, not third-party authentication of an adversarial author.

Per-Atom execution index

Every command below takes the same mandatory `--world PATH --inputs PATH --output PATH` and optional dispatch flag shown above. All functions listed are implemented in this directory. Direct component calls in tests are numerical unit tests, not scheduler activation or accepted predecessor evidence.

atom-000001 — Clock and cohort

Command: `run.py --atom atom-000001 --world PATH --inputs PATH --output PATH`. Callable: `pipeline.stage_b(Inputs(manifest))`; construction functions are in `construction.py`, checks in `quality.py`. Inputs: decisions, releases, spine, jobs, source benchmark/linkage checkpoints and the source-backed global and construction dictionaries above. Output: `sample-flow.csv` (count, persons by step/exclusion/arm/year), `cohort-summary.csv` (value, persons/shares), `quality-checks.csv` (all seven check IDs, quantity, threshold, reconciliation, disposition), `scope.json`, `density.csv` (arm/month/share fraction), `balance.csv` (signed standardized difference). Age 18–55 at origin, initial 2009–2017 index, release clocks, 12-pre/6-post coverage minimum, whole-month censoring and bounded 43-month panels are implemented. Full history begins in 1980; reserve widening is not automatically applied. Tests: ConstructionTests and LogicTests, including the full raw synthetic extraction → Stage-B boundary path. Limits: U01–U06/U11, U15 and full-script deposit; no unresolved DOI/date/age rule is guessed.

atom-000002 — Traffic battery

Command: `run.py --atom atom-000002 --world PATH --inputs PATH --output PATH`. Callable: `analyses.traffic_components(panel, workspace, ...)`, using `estimators.R::fit_event`, `window_contrast`. Inputs: source-valid T rows from the KRAF/BFL/spine panel, after common validity. Outputs: `event-coefficients.csv` (T, –24..18, probability coefficients and 95% limits), `hazard-levels.csv` (raw monthly probability), `contrasts.csv` (delta_T, SE, CI, p), `equivalence-band.csv` (hazard ratio, 90% target), `archive-record.json` and `aggregate model-summary.json`. The coefficient/contrast/profile calculations run; U07 band remains explicit and archive completion stays false. Tests: NumericalTests 01–03, archive/default dispatch tests, F2/F3 interfaces. No equivalent-to-zero claim is made.

atom-000003 — H1 and registered internal analyses

Command: `run.py --atom atom-000003 --world PATH --inputs PATH --output PATH`. Callable: `analyses.h1_components(panel, workspace, ...)`; `inference.claim_gates`. Inputs: common scope, original complete T evidence, pooled/F/S/C source panel; source coverage/heaping flags and conditional definitions. Outputs: `event-coefficients.csv` (pooled/F/S/C), `hazard-levels.csv` (F/S/C raw probabilities), `h1-contrasts.csv` (main/placebo/F/S/C and triggered donut), `claim-gates.csv` and `claim-gate-inputs.json` (both kills, literal 2.576/1.96 screens, both verdicts), `robustness.csv` (each variant, trigger and foreground flag), `heterogeneity.csv`, `aggregate model-summary.json` (including main/placebo covariance). Units

are probability differences; figures multiply by 100 to percentage points. Source signed denominators and strict/inclusive inequalities are retained. Main remains visible after kills. Person-FE alias, matched-T weights, reweighting, reset law and heterogeneity gaps have separate rows. Supported adjusted-anticipation/donut, constant-composition and heaping variants execute after their source prerequisites. Tests: numerical dummy-matrix oracle, all verdict/equality cases, missing bins, FS scope, conditional variants and F1–F3. Default empirical activation currently remains unavailable until complete source T archival is possible.

atom-000004 — Schedule and anchors

Command: `run.py --atom atom-000004 --world PATH --inputs PATH --output PATH`. Callable: `analyses.schedule_components(models, traffic, panel_decision60, workspace, ...)`. Inputs: original F/S/C and T aggregate summaries/covariance, independently dated C decision+60 panel. H3a adds independent-arm variances; H3b uses the original S main/placebo joint covariance; H3c/E7_release reuse original C; E7_decision fits its own source clock. Outputs: `schedule-contrasts.csv` (probability differences, SE/CI/raw p and adjustment status), `anchor-reading.csv`, `family-ledger.csv`. No predecessor explicitly no_result is refitted. Tests: NumericalTests 02, independent difference and covariance checks, partial C/comparator branches. U09 blocks family counting, E7 tested unit, adjusted intervals and full anchor adjudication; available F/S/C components survive.

atom-000005 — Industry signatures

Command: `run.py --atom atom-000005 --world PATH --inputs PATH --output PATH`. Callable: `analyses.industry_components(panel, workspace, code_map, ...)` and `estimators.R::industry_results`. Inputs: source risk panel, highest-hours start attributes, exact DB07 normalization, source-backed E4 mapping/percentile convention if available. Outputs: `industry-contrasts.csv` (dimensionless theta, E4 proportional jumps/pairs, division-84 and triggered missing-industry columns), `industry-composition.csv`, `industry-events.csv` and `mechanism-family-ledger.csv`. H2's <1000/cell gate precedes its estimation. 999 cluster bootstrap actually runs; failure replicates are not dropped/replaced. E4 uses the same implemented kernel once its source classes are supplied; pairwise p rules/family decisions remain U09. F4 remains unavailable because the source supplies no model-to-level map. Tests: exact-prefix/missingness/tie checks, gate and workplace-concentration branches, actual 999-resample H2 with the independent 2/3 oracle, F4 unavailable and partial interfaces. E4 source mapping and E4 numerical three-class execution are not validated on a recovered source definition in this round.

atom-000006 — Employed mobility

Command: `run.py --atom atom-000006 --world PATH --inputs PATH --output PATH`. Callable: `analyses.mobility_components(panel)`. Inputs: common source panel; baseline employed membership at month -1 is computed. Outputs: `mobility.csv` (E6_mobility and certificate_destination_interaction separately, baseline persons,

status/reason), destination-composition.csv. **No E6 estimate is implemented as a substitute for the missing source model.** U10 leaves continuity, subsequent risk set, concurrent workplaces and interaction parameterization unresolved; U09 also blocks correction. The source workplace field ends in 2017 documentation. Tests: actual baseline-membership construction and independent component boundary rows. This module cannot truthfully be called an executable numerical E6 model until the source definition is recovered.

atom-000007 — Job quality and annual wages

Command: `run.py --atom atom-000007 --world PATH --inputs PATH --output PATH`. Callable: `analyses.quality_components(hires, annual, workspace, ...)`, `construction.annual_differences`, `survival_indicator`, `R ols_difference`. Inputs: BFL hires and optional independent IND annual records, source-resolved selection/first-full-month/winsor/unit definitions. Outputs: job-quality.csv: E1_hours (hours/month; U12 conflict), E1_log_wage (log currency), E2_annual_wage (annual wage currency, conditional on verified unit), E3_survival (probability difference at exactly 180 days); family-ledger.csv. E2 compares person means of +1,+2 against -2,-1, excluding year zero. Missing annual input preserves BFL outcomes. Nonpositive logs, missing annual years and censored job ends stay unresolved. Tests: independent annual-mean/SE oracle, 179/180-day and annual-year boundaries, actual E1 wage and E3 numerical paths, missing-IND siblings. Hours winsorization and U09 quality-family decisions remain source-blocked.

atom-000008 — Benefit-clock audit

Command: `run.py --atom atom-000008 --world PATH --inputs PATH --output PATH`. Callable: `construction.benefit_states`, `analyses.benefit_components`, `R benefit_results`. Inputs: risk panel, OF spells, exact vintage code map and completeness. Outputs: benefit-audit.csv (UI_activation, other, between_state; probability differences and 95% intervals; only the difference has the singleton audit p-value), state-composition.csv, aggregate joint-covariance.json. Estimation uses a single block equation with separate event/calendar/duration/arm terms per state and joint person clustering. Tests: independent block-matrix OLS/sandwich oracle, inclusive PTI dates, missing maps, absence and conflicting overlaps. U13 mapping/overlap gaps stay visible; no benefit-confounding verdict is invented.

Results, disclosure and figure interfaces

Every required unavailable target has a row. `status` is one of the existing figure-supported available/pending/pre_data_unresolved/not_activated/no_result/boundary/withheld/partial dispositions. Operational absence is never a zero, p-value, statistical null or accepted predecessor. All CSVs carry status/reason; finalized files also carry target/component, unit, scope, tier and source locator. All empirical manuscript slots remain empty.

`result.json` contains only aggregate execution provenance, identities, status, activation trace and artifact hashes; never raw rows or identifiers. Aggregate

model-summary/claim-input JSON is **governed internal evidence**, not an export clearance. Temporary model parquet is inside the action workspace and removed after each call. Public CSV/figure use requires a supplied source-backed **clearance** descriptor (**path,sha256,source_locator**). Without it governed numeric CSVs are withheld. Known <5-person cells remain withheld even with that descriptor. Other workplace/concentration and current clearance requirements still require documented verification; U14 contains no automatic collapse algorithm. Nothing is uploaded or published by this code.

implementation_files/implementation_id record the executed code separately from registration and World realization. **interpretation.json** evaluates the existing Molecule rules with restrictions first, preserving unknown/unresolved members; it never fills the Molecule's canonical body or the paper.

run_tests.py loads the unchanged **docs/paper/figures.yaml**, selects F1 pooled and F2 treated rows exactly as registered, and passes actual generated aggregate tables to all six unchanged renderers. It also runs explicit partial, unavailable and not-activated cases at 130.7 mm. F4/F6 source gaps are rendered as gaps; no raw-hazard or standardization default is disguised as their missing source result.

Running the synthetic tests

```
OPENBLAS_NUM_THREADS=1 OMP_NUM_THREADS=1 \  
  /home/shaoerzhuo/anaconda3/bin/python -B run_tests.py \  
  --world /ABSOLUTE/READ_ONLY/WORLD \  
  --output /ABSOLUTE/NEW/SCRATCH_DIRECTORY
```

Tests create their own fixtures, logs, numerical results and previews solely in the supplied scratch directory. The full test includes the actual 999-resample bootstrap and can take several minutes. Seeds are fixture-only except the source bootstrap seed. Test report, source gaps, exact commands and round-one engineering findings are recorded in **../engineering/implementation-report.md**. Passing tests does not establish empirical replication, causal validity or access to Danish data.

Engineering supplement

Round 1 implementation report — author

This bundle implements supported construction, estimation, dispatch and aggregate interfaces for the frozen eight-Atom record-clearing study. It is not an empirical replication, an amendment, a completed data application, or independent scientific acceptance. Important numerical targets remain **STOP_UNRESOLVED_SOURCE** because the source does not define them; in particular there is no invented E6 mobility model or arm-T hazard-ratio band. Those are explicit scientific boundaries of this implementation, not TODOs presented as completed analyses.

Authority and evidence inspected

Read the required `tools/prereg-lane/AGENTS.md`, the complete predata-engineering, preregistration-package and paper-to-replication skills; the package-contract, atom-granularity and paper-scaffold references; adaptive skill/foundations; and Danish-schema skill. Read all eight native Atom protocols/result partitions, the full Molecule registration, data contract, identification, governance, source/deviation/audit inventories, result-slot bindings and all six figure implementations plus shared style/render support. The selected mode is adaptive. No additional agent was spawned: this invocation is the implementation author, and the user expressly prohibited additional agents.

The existing World has no `prereg/code/` implementation. The source-provenance inventory identifies the original `analysis_skeleton.R`, `extraction_skeleton.R`, `execution_plan.md` and `planning power_simulation.py`. The R skeletons and planning code were read; the original power simulation was not imported or rerun. Its ratio-of-totals simulation estimator was not substituted for the registered fixed-effects analysis. Governing source locators are `prereg.yaml` `population/data`, `analysis_plan.estimator/preprocessing/contingent_decisions/outlier_rule/missing_data_rule/estimation_order_lock`, `outcome_neutral_checks`, hypotheses H1–H3, additional E1–E7, A1–A4; execution-plan S1–S14 and §4/§5; and the exact U01–U15 ledger incorporated by each Atom.

Local schema evidence was inspected under `resources/schema/data-registry-bolero/fsv/`: `living-conditions/KRAF.md`, `KRIN.md`, `OF.md`; `labour-income-and-wealth/BFL.md`, `IND.md`; and `population-and-elections/BEF.md`, `CPST.md`, `VNDS_UD.md`. Consequential verified locators include:

- KRAF Variables lines 29–71: decision/appeal/court/sanction/offence/disqualification, sentence-length, JOURNR and PNR fields; History line 130: 2014 person-key repair; line 138: GER7 becomes first-four-digits plus zeros from counting year 2020. This is a follow-up-history coding concern, not permission to add GER9 to the frozen field extraction or infer a historical classification.
- KRIN Variables lines 53,60–61: release date and keys; History line 124: 2016 PNR repair. Same-case priority, strict after-decision timing and the eight-year upper bound come from the source protocol, not a new metadata inference.
- BFL Variables lines 26,30,39–47,57: workplace key, DB07, compressed-job start/end, hours/wage and PNR. `AJO_ARBNR_SENR` is documented only through 201712. The label “paid hours in compressed jobs” does not establish start-month paid hours; source-backed reduction is required before multiple-start attribute ranking.
- BEF Variables lines 48,52,58: birth date/sex/person; CPST line 49 and History lines 95–96: `VAN_VFRA` limited/missing historical periods; `VNDS_UD` Variables lines 36,41,45 and History: `HAEND_DATO` has no supplied semantic label. No emigration/death date is inferred from these names or quarterly absence.
- IND Variables line 140: `LOENMV_13` total wage income. Currency scale/vintage is a required runtime confirmation, not inferred from its label.

- OF Variables lines 35–39 and History dated 23/04/2018: interval fields and the July-2017 change to unemployment code 5025. That one code is not a complete historical classification or overlap-priority algorithm.

No live search was used; therefore there are no new queries/URLs or web access claims. The local documents preserve their official DST source URLs. These are documentation only: no confidential Danish/APTO data, old empirical session, measured study outcome, remote QGPU or runtime mount was accessed. No dependency was installed, environment replaced, message sent to another person, or commit/ push/release performed. No runtime-figure-interface.md or runtime-execution-interface.md was present in the supplied task tree.

Implemented coverage

Exact commands, logical input columns, source-table/field lineage, outputs and remaining limits are indexed **separately for every Atom** in `../execution/README.md`. The CLI is `run.py --atom ID --world PATH --inputs PATH --output PATH --dispatch-policy activation_respecting|direct`.

Atom	Executed supported engineering/numerical coverage	Exact remaining scientific limits
atom-000001	Source case resolution, historical first-observed-guilt screen, A3 arm screen, C same-case/fallback linkage, legal month clocks, 18–55 eligibility, 12-pre/6-post coverage, whole-month exits, bounded panels, binary job starts, missing/tied attributes, all seven check computations/dispositions, density and scoped balance implementation. Raw synthetic extracts actually ran through Stage B.	Global U01–U06, U15/full-script deposit are not resolved. Source-backed categorical/standardization and density-rounding definitions remain necessary. Spine dates, court ranks and legal lists are never generated.
atom-000002	Actual R/fixest T profile, equal-bin delta_T, CR1/Wald inference and separate raw hazards.	U07 prevents a completed archive; no invented HR transform, equivalence bound, TOST or “flat T” claim.

Atom	Executed supported engineering/numerical coverage	Exact remaining scientific limits
atom-000003	Pooled and F/S/C models, main/placebo covariance, all literal claim gates and A2 sensitivity; actual adjusted-anticipation/donut, constant-composition and heaping branches under fixture-supplied definitions; person-FE alias boundary; matched-T trigger measurement.	Raw-versus-adjusted anticipation choice, matching weights/zero-hazard policy, reweighting, historical reset, heterogeneity model/family remain U01/U09/U11. The current CLI cannot bypass missing complete T archival.
atom-000004	H3a independent-arm difference, H3b same-S joint-covariance contrast, C release reuse and a separately dated decision-anchor model. Available siblings survive a missing predecessor estimate.	U09 E7 tested unit, duplicate release counting, absent-member and adjusted-inference rules. Anchor reading is not guessed from unadjusted nonsignificance.
atom-000005	Exact binary prefix classifier, >5% dual coding, division-84 column, pre-estimation H2 hire/cell gate, person bootstrap and source-resolved three-class numerical kernel; F4 missing display interface.	U08 historical/authority-position definitions, some missingness cases, zero denominators/bootstrap failures, percentile convention and model-to-level map; U09 p-values/adjusted intervals/family. No additional child-sector exclusion.
atom-000006	Baseline-employed membership at -1 and explicit separate E6 output rows.	U10 does not specify a job-to-job risk set, continuity/concurrent workplaces or interaction. No numerical E6 estimator is claimed or replaced with all job starts.

Atom	Executed supported engineering/numerical coverage	Exact remaining scientific limits
atom-000007	Source >400-hours missing rule, valid positive first-full-month wage/log component conditional on source inputs, within-person annual four-year difference, exact 180-day survival difference, CR1 inference and component missingness.	E1 hours winsorization conflict, hire selection/short-job first-full-month issues, nonpositive logs, incomplete annual years/end dates, quantile/unit conventions and U09 family remain visible.
atom-000008	Inclusive month-start PTI joins under supplied code maps, source-resolved states and actual joint block-equation event LPM; one uncorrected between-state audit test.	U13 complete codes/completeness/overlap priority unresolved. No decisive benefit-clock magnitude cutoff or mechanism verdict added.

Why the engineering adaptations preserve the source

1. **estimators.R** completes the original feols model/contrast skeleton. It retains calendar-year-month, duration bins 1–36/37+, pooled arm FE, omitted month –1, binary LPM and person CR1. Normal Wald inference follows the source’s explicit z rules. Raw hazard means are separately labeled descriptive and never replace the equal-bin coefficient contrast. Missing required bins are not averaged away.
2. Same-case appeal resolution precedes independent-case counting, avoiding the stale plan’s double counting of appellate rows. Unresolved earlier sanctioned cases remain relevant to first-conviction eligibility; unresolved later cases cannot silently disappear from censoring. This implements the existing single- observed-conviction rule and records the U03 limitation.
3. Month arithmetic uses the registered event month, so no end-of-month day convention is needed for a month-level estimand. The C release clock, original decision date, decision+60 placebo and later conviction clock remain distinct. Censoring excludes the entire event month of an exit. The source’s inclusive BFL day-one rule is preserved even though it excludes day-one starters from that month’s nonemployed risk set.
4. T/F independent-arm uncertainty and S main/placebo covariance are carried from their original fits; schedule does not rerun failed predecessors. E5 is a joint block equation with separate state event/calendar/duration/arm terms and a common person-cluster sandwich, implementing the source’s joint-person covariance

requirement. Explicit dense block-matrix oracles check its actual finite-sample CR1 convention.

5. Bootstrap resamples complete people with source seed 20260818, 999 times; repeated people receive distinct resampled cluster identities. Point estimates survive a failed interval when appropriate, but failed replicates are never dropped/redrawn or replaced with a delta-method CI. Finite-sample quantile conventions require source-backed metadata; fixture conventions do not settle the source gap.
6. PyArrow performs explicit dataset reads and cohort-filtered BFL scans because Polars was unavailable. BFL construction uses bounded person chunks, never a full population/calendar cross join. Other supplied extracts and final panels are currently materialized in memory. This is a reference implementation, not a demonstrated Danish-scale performance benchmark; memory/staging may require a documented mechanical adapter on the governed system.
7. Native activation was checked against `prereg_lane/native.py::evaluate`: absent evidence is unknown, explicit `no_result` makes `done` false, and `no_result` does not confer a scientific state. Direct dispatch changes outer scheduling only. Missing optional annual data or a C estimate does not erase feasible BFL/F/S siblings. The lawful F+S contingency retains absent C component reasons.
8. Registration identity hashes only frozen payloads/roster and immutable source material. Mutable native bodies have a separate realization digest. Input identity includes content and definitions, not absolute machine paths. Predecessor artifacts, result integrity and input/source bindings are checked. `interpretation.json` evaluates the existing Molecule rules restrictions-first; it does not write any canonical body or paper slot.

Actual tests and findings

All generated material is under the supplied author scratch directory, outside the World. Tests are plainly labeled `SYNTHETIC_ONLY`. The source Stage-A planning simulation was not run.

Main command (successful full run):

```
OPENBLAS_NUM_THREADS=1 OMP_NUM_THREADS=1
↪ /home/shaoerzhuo/anaconda3/bin/python -B \
  /home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-code-2026090 \
  ↪ 6/record-clearing/v001/world/prereg/execution/run_tests.py
  ↪ \
  --output /home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-cod \
  ↪ e-20260906/record-clearing/scratch/r01/author/test-run-02
```

This completed **29 unittest methods, all passing, in 175.921 seconds**. The methods include many separate graph, threshold and date cases. Actual numerical checks included full dummy-matrix OLS/cluster-sandwich comparison for H1 and an independent block-matrix oracle for E5. H1 SE agreement was within 4e-13; E5 SE agreement within 2e-10. A hand-constructed H2 fixture has theta exactly 2/3 for every cluster resample; the actual 999-bootstrap point and percentile endpoints matched within 1e-12. These are test identities, not study forecasts or results.

The suite exercised 16 CLI combinations (all eight Atoms $\times$ both dispatch policies) from copied code against a separately relocated read-only World, with outputs outside it. It changed realized Atom bodies/current Molecule prose in the copy, verified stable registration identity, rejected protocol tampering, rejected corrupt/wrong-input evidence, and rejected explicit no_result retries. All six unchanged figures rendered generated, partial, unavailable and not-activated interfaces: **24 vector PDFs**, verified at 130.7 mm with full long-note text. F4/F6 genuine source gaps stayed unavailable. Their partial renders were visually inspected and showed readable notes without overlap. Additional complete F4/F6 schema-only display fixtures are separate tests, not fabricated model outputs.

After the successful full run, targeted construction and quality checks covered the unresolved-prior-case fix, start-month-attribute boundary and annual-year selection: **13 methods passed in 11.573 seconds**, recorded in `scratch/r01/author/final-targeted-checks/targeted-report.json`. Later targeted checks completed as follows; unchanged numerical tests were not rerun merely for documentation edits:

Follow-up run under author scratch	Result and purpose
<code>E4-targeted-checks/targeted-report.json</code>	Five methods passed in 126.674 seconds. The actual three-class 999-person-bootstrap recovered hand-computable contrasts 0.5, 0, -0.5 and pairwise differences 0.5, 0.5, 1 while H2's separate hire gate blocked H2. A zero-denominator case remained a boundary. H1/T/schedule and portability checks also passed.
<code>final-interface-checks/targeted-report.json</code>	Seven methods passed in 30.321 seconds: construction, actual quality estimators, complete F4/F6 display interfaces and portability. This includes the below-80% Stage-0 stop before observation reads, explicit DKK/year resolution, the >400-hours boundary and both dispatch policies for all eight Atoms.
<code>last-contract-checks/targeted-report.json</code>	Two methods passed: nullable/integer-valued source sanction codes, and evidence corruption/binding checks including rejection of a completed predecessor that denies having a scientific result.

There are **31 distinct test methods**, exercised across the successful full run and these targeted runs; this is not a claim of one final 31-method invocation. The

additional complete F4/F6 PDFs were also visually inspected. Labels and the source 0.10 reference were readable without overlap. Their schema-only synthetic values do not resolve the missing source model or fill manuscript slots.

Initial `test-run-01` had three failures and one test-fixture error. They were investigated and fixed rather than hidden:

Finding	Resolution and verification
Independent covariance oracle used a different degrees-of-freedom count.	Retained the source/default fixest inference; corrected the independent oracle to count absorbed levels under the actual default, without forced-exact rank adjustment. Separate targeted H1/E5 numerical checks passed before the full rerun.
fixest returned a huge-SE person-FE normalization despite an exact event/calendar/person alias.	Added the exact algebraic source-clock alias check. The variant now has a nonestimability component boundary; no easier model or coefficient normalization is substituted.
Copied source records retained read-only permissions during the mutation test.	Only the scratch copy is made writable for mutation, then made read-only for execution. The actual World remains unchanged.
Native <code>done(no_result)</code> had initially been treated as unknown.	Corrected against <code>native.py</code> : false for an explicit terminal, unknown for absent evidence. All source graph paths remain tested.
Optional-path validation could have stopped unrelated components before activation.	Observation files are verified when their component uses them; absent optional inputs stay component-scoped. Metadata/evidence tampering is still rejected.
Excluding an unresolved appeal could hide an earlier sanctioned case.	Original observed history now screens later candidates; unresolved future cases cannot silently disappear from censoring. Targeted synthetic regression cases passed.
Annual year zero could enter the preprocessing population despite being excluded from the contrast.	The source $\pm 1/\pm 2$ selection precedes annual winsorization; independent four-person mean/SE tests exercise the actual E2 path.

Source-blocked scope and external review status

U01/U02/U03/U04/U05/U06/U15 and source full-script/editorial prerequisites remain global pre-data constraints. U07 blocks complete T archival and therefore default treated activation. U08/U09/U10/U11/U12/U13/U14 retain the exact affected components listed in the native data contract and per-Atom README. No incomplete exploratory family is silently reduced, no minimum-p or invented adjusted CI is supplied, and no missing/withheld value becomes zero. Source pre/post windows, pending source categories and the table roster have not been scientifically amended.

The strongest remaining implementation limitations are: no source-resolved E6 numerical model; no T ratio-band construction; no historical reset/matching/reweighting/heterogeneity specification; no E1 hours winsor rule; and no recovered exact exploratory family/test/adjusted-interval rules. Code can execute the supported kernels on explicitly supplied source-backed inputs; it cannot provide scientific choices absent from the registration. Authenticated source resolutions, actual permission/coverage, output clearance and a compliant R 4.3 engine are still required for a governed empirical run. Synthetic success proves none of those requirements.

There were no prior engineering reviewer findings supplied in round 1. The requested adversarial Opus and Codex Sol xhigh checks have **not** been performed by this author. They remain for the controller's independent review phase; no author self-check is represented as either review or its acceptance.

Preservation and software record

Byte comparison against the immutable controller source found **81 original files checked, zero differences**. All author additions are confined to `prereg/execution/` and `prereg/engineering/`; every synthetic artifact is outside the World. Eight Python files and the R source passed parsing checks, in addition to the actual numerical tests. Parsing is not cited as numerical validation. The final repeat is recorded in `scratch/r01/author/final-preservation-report.json` and also found zero unauthorized additions. Final `--help` succeeded without data; the empty-input atom-000003 default-dispatch smoke run produced `not_activated` with separate implementation provenance in `scratch/r01/author/final-cli/result.json`.

Installed/tested versions: Python 3.12.4; NumPy 1.26.4; pandas 2.2.3; SciPy 1.15.2; statsmodels 0.14.4; PyYAML 6.0.2; PyArrow 19.0.0; Matplotlib 3.10.0; PyMuPDF 1.24.9; R 4.1.2; fixest 0.12.1; R arrow 18.1.0.1; jsonlite 2.0.0. Polars absent. Registered R 4.3 unavailable; no governed numerical run is claimed. Publication Helvetica Neue style resources were not supplied; figure checks used the existing template's local DejaVu Sans binding, not a claim of final publication-font validation.

Reference implementation review

Engineering status: REVIEW INCOMPLETE. Review rounds: 3. Revision slots used: 2 (initial draft excluded).

User-directed bounded handoff: no more than two author revisions. Proceeding to formatting is not reviewer acceptance. Failed/missing reviewer calls have no scientific verdict; original records remain available below.

This augmentation used schemas, documentation and synthetic fixtures only. Code review and package compilation do not establish scientific validity, empirical replication, data availability or independent acceptance of the original science. Original registrations, manuscript sources and scientific review remain unchanged. Unresolved source definitions remain unresolved; runnable components and blocked targets must be distinguished in prereg/execution/README.md.

The host checks prose Atom coverage, Python syntax and synthetic commands. These are engineering checks, not a scientific verdict.

Controller checks and review dispositions

```
{
  "round": 3,
  "accepted": false,
  "host": {
    "status": "pass",
    "findings": [],
    "processes": [
      {
        "label": "r03-host-run",
        "command": [
          "/home/shaoerzhuo/anaconda3/bin/python",
          "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-cod
          ↪ e-20260906/record-clearing/scratch/r03/host/attempt-01/world/pr
          ↪ ereg/execution/run.py",
          "--help"
        ],
        "model": null,
        "cwd": "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-referenc
          ↪ e-code-20260906/record-clearing/scratch/r03/host/attempt-01",
        "log": "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-referenc
          ↪ e-code-20260906/record-clearing/logs/r03-host-run-a01.log",
        "created_at": "2026-09-06T12:11:53.016406+00:00",
        "status": "finished",
        "pid": 2429727,
        "start_ticks": "83478793",
        "state": "R",
        "started_at": "2026-09-06T12:11:53.023715+00:00",
        "returncode": 0,
        "completed_at": "2026-09-06T12:11:53.995787+00:00"
      },
      {
        "label": "r03-host-run_tests",
        "command": [
          "/home/shaoerzhuo/anaconda3/bin/python",
          "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-cod
          ↪ e-20260906/record-clearing/scratch/r03/host/attempt-01/world/pr
          ↪ ereg/execution/run_tests.py",
          "--output",
          "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-cod
          ↪ e-20260906/record-clearing/scratch/r03/host/attempt-01/output"
        ],
        "model": null,

```

```

      "cwd": "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-referenc
      ↪ e-code-20260906/record-clearing/scratch/r03/host/attempt-01",
      "log": "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-referenc
      ↪ e-code-20260906/record-clearing/logs/r03-host-run_tests-a01.log",
      "created_at": "2026-09-06T12:11:54.003073+00:00",
      "status": "finished",
      "pid": 2429746,
      "start_ticks": "83478891",
      "state": "R",
      "started_at": "2026-09-06T12:11:54.010389+00:00",
      "returncode": 0,
      "completed_at": "2026-09-06T12:16:49.573216+00:00"
    }
  ],
  "completed_at": "2026-09-06T12:16:49.580209+00:00",
  "scope": "Structural coverage, syntax and synthetic execution; not
  ↪ scientific validation."
},
"reviews": {
  "opus": {
    "status": "complete",
    "verdict": "revise",
    "report": "/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-referen
    ↪ ce-code-20260906/record-clearing/reviews/r03/opus.yaml"
  },
  "codex": {
    "status": "failed",
    "verdict": null,
    "error": "FileNotFoundError: [Errno 2] No such file or directory:
    ↪ '/home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-cod
    ↪ e-20260906/record-clearing/reviews/r03/codex.yaml'"
  }
},
"review_status": "incomplete",
"revision_slots_used": 2,
"continuation": "package_current_draft_with_unresolved_findings"
}

```

r01 / codex.md

Codex independent engineering review — round 1

Verdict: **revise**.

This is a source-fidelity and reference-code verdict, not scientific acceptance of the frozen study. The implementation contains real, tested construction and estimation kernels; it is not merely eight missing-input wrappers. The complete World-authored suite passed 31/31 methods. However, my independent negative suite reproduced seven defects, including four trust/authorization failures capable of changing which science runs or which quantities are released. No Danish/APTO data, old empirical session, QGPU, or empirical estimate was accessed.

Snapshot and source basis

I read the required prereg-lane instructions and the full predata-engineering, preregistration-package, and paper-to-replication skills/references. I read every Atom

registration and result region, the Molecule policy, shared data, identification and governance contracts, source/deviation inventories, original eight-file source package, execution implementation/report, result bindings, and all figure code. The locally archived DST metadata for KRAF, KRIN, BFL, BEF, CPST, VNDS_UD, IND, and OF was sufficient to audit the claimed source limits; I did not need a new live-source interpretation.

`diff -qr .controller/source v001/world` reported only the new `prereg/engineering` and `prereg/execution` directories. All original Atom, Molecule, manuscript, replication, and source-interface files are therefore byte-identical to the immutable controller package. The original native source hashes also matched its provenance record (including `prereg.yaml` 276b987b...b878678, `analysis_skeleton.R` b15c323b...b15ecc0, and `execution_plan.md` 6232c9d8...a4f90e).

The original R skeleton and frozen protocol support the implemented fixest event LPM, equal-bin contrasts, and person CR1 inference. The implementation correctly does not substitute the planning simulation's ratio-of-totals calculation. RD and staggered DiD are not registered estimators here. E3 is a registered binary 180-day durability contrast, not a Cox/competing-risk analysis; the code does not invent one.

Tests actually run

World-author-authored suite, executed by this reviewer

```
OPENBLAS_NUM_THREADS=1 OMP_NUM_THREADS=1
↪ /home/shaoerzhuo/anaconda3/bin/python -B \
  /home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-code-2026090
↪ 6/record-clearing/v001/world/prereg/execution/run_tests.py
↪ \
--world /home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-code
↪ -20260906/record-clearing/v001/world
↪ \
--output /home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-cod
↪ e-20260906/record-clearing/scratch/r01/codex/author-suite
```

Result: 31 tests passed in 268.427 seconds. This was authored with the reference code and is not an independent oracle by itself. It nevertheless actually ran the R kernels and includes useful explicit-dummy/cluster-sandwich and block-covariance comparisons. Its recorded event oracle matched estimate and SE to numerical precision; the E5 joint covariance SE differed by about $1.6\text{e-}10$; the 999-draw H2 and E4 hand fixtures recovered their designed values. It also ran all eight Atoms under both dispatch policies from copied code, missing/partial sibling cases, and all six figure templates.

Reviewer-authored falsifying cases

The proof source is `scratch/r01/codex/adversarial_checks.py`; artifacts and the summary are under `scratch/r01/codex/adversarial-output/`.

```

OPENBLAS_NUM_THREADS=1 OMP_NUM_THREADS=1
↪ /home/shaoerzhuo/anaconda3/bin/python -B \
  adversarial_checks.py \
  --world /home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-code_
  ↪ -20260906/record-clearing/v001/world
  ↪ \
  --output /home/shaoerzhuo/Bolero-denmark/.prereg-runs/denmark-reference-cod_
  ↪ e-20260906/record-clearing/scratch/r01/codex/adversarial-output

```

Result: 7/7 passed in 2.214 seconds. Here “pass” means the negative condition was reproduced:

1. scientific code changed while frozen identity still validated, and the tampered copied CLI exited 0;
2. a real IND-only parquet masqueraded as a panel and a contradictory event clock passed;
3. a document saying **DENIED** asserted both source resolution and clearance;
4. self-digested Atom 1/2 results with only `complete:true`/timestamp in the T archive authorized the Atom 3 prerequisite;
5. one F:2009 coverage benchmark cleared the otherwise passing Stage-B roster;
6. Atom 4 skipped an available local decision+60 construction path; and
7. Figure 5 rendered one available month per arm without an error or unavailable note.

Two earlier invocations of this reviewer suite had harness errors: the copied World retained read-only permissions, the first render requested absent publication fonts, and cleanup initially encountered those permissions. I changed only my scratch harness to make its copy writable and use the renderer’s supported local DejaVu mode. The final run above is clean; none of these setup errors was counted as a reviewed-code failure.

Findings requiring narrow fixes

RC-01 — scientific code is not pinned (high)

`prereg/execution/contracts.py:45-72` omits `prereg/execution` from registration identity. `validate_world` at lines 75-80 reads `frozen-identity.json` from the same copied code directory. `run.py:155-157` records current implementation hashes but never compares them to a trusted value. My test changed an inference threshold from `.05` to `.50`; the altered/original hashes were respectively `1d4c3b20...168c30` and `9b985cae...af83`, yet validation returned the same registration ID and the copied CLI ran.

Fix: pin all scientific execution sources in an immutable World/controller manifest and compare copied action code to it before dispatch. Continue excluding mutable realized Atom bodies and current Molecule prose. Regressions should reject changes to `inference.py/estimators.R` while accepting legitimate result-body and current-interpretation updates.

RC-02 — resolutions and clearance are unverified assertions (high)

`contracts.py:170-185` binds bytes to a caller-supplied hash but does not bind the descriptor's value to those bytes or verify authority. No per-key schemas are applied at lines 211-212. `run.py:178-204` uses that same generic byte check as the entire governed-output clearance decision. Consequently a denial document plus `status: source_resolved` and `value: A1_accepted` passes, and the same denial is accepted as clearance (`adversarial_checks.py:131-144`). `README.md:86-94` says a human must verify semantics, but the runtime has no evidence that this occurred.

Fix: use typed authority-issued records whose values are bound to their content. Clearance needs its own approval schema: issuer, approval state, scope, permitted artifacts/cells, validity, and content binding. A denial/irrelevant-document regression must fail.

RC-03 — incomplete self-authored evidence can authorize successors (high)

`contracts.py:215-244` validates the digest and artifact list supplied by the same result, but no trusted implementation, exact per-Atom artifact inventory, target roster, or state/artifact consistency. `run.py:91-98` considers the T prerequisite complete from state, `complete:true`, and a timestamp. That is weaker than Atom 2's required profile, delta, 90% band, and complete archive (`atoms/atom-000002.md:103-120`). My self-digested evidence omitted the band, contrast, event profile, and model summary; `load_evidence` accepted it and Atom 3's prerequisite returned `scope_fsc` (`adversarial_checks.py:146-181`).

Fix: validate trusted implementation provenance and exact predecessor output schemas, or recompute state from bound artifacts. Atom 2 completeness must require all 43 bins, `delta_T`, the one available U07 interval plus method, model summary, and a target/timestamp ledger. Add missing/contradictory artifact regressions.

RC-04 — unrelated tables can impersonate derived panels (high)

`contracts.py:188-210` checks only that each logical column cites some globally allowed field. It does not implement the named input/table/column contracts in `README.md:126-140`. `pipeline.py:14-32` then verifies only that physical columns match the manifest keys. `analyses.py:26-39` makes `clearing_month` optional and therefore skips clock validation when it is omitted. A parquet where every panel column cited `IND.LOENMV_13`—including `arm`, `event_month`, and `y`—passed the loader and model-panel validator despite contradictory event/calendar order (`adversarial_checks.py:95-129`).

This permits bypass of the frozen cohort, exposure, censoring and future-selection rules in `prereg/data-contract.md:23-33`.

Fix: enforce an exact required/optional schema, allowed source dependencies, and derived-lineage deposit for every named dataset. Require `clearing_month` and its identity with `cal_ym - event_month` on every panel. Reject or cross-validate ambiguous simultaneous raw/prebuilt inputs.

RC-05 — Stage-B accepts an incomplete benchmark roster (high)

The source requires arm-by-year coverage counts (`prereg/data-contract.md:35-45`). `pipeline.py:120-124` processes only rows the caller supplies. `quality.py:66-85` creates an unresolved fallback only if the entire metric is missing, not a required stratum, after which lines 88-93 can return `scope_fsc`. One passing F:2009 coverage row plus a passing value for each other metric produced `scope_fsc` in `adversarial_checks.py:183-205`.

Fix: materialize the complete frozen arm/index-year roster, mark every missing stratum unresolved, and block scope clearance until each is measured or covered by a source-authorized outcome-neutral reconciliation.

RC-06 — Atom 4 misses supported local construction (medium)

`pipeline.py:61-110` can construct/cache `panel_decision60`, but `run.py:102-107` calls construction only for Atoms 2, 3, 5, 6 and 8. Atom 4 reads the optional panel directly at lines 113-115. With a construction stub capable of providing the panel, `run_atom(4)` never invoked it and returned `E7_decision` unresolved (`adversarial_checks.py:207-222`). This is inconsistent with the optional prebuilt/local-construction interface (`README.md:134-135`) and the separately supported E7 decision anchor (`atoms/atom-000004.md:208-246`).

Fix: if `panel_decision60` is absent, Atom 4 should invoke shared raw construction and consume that cache, without recreating failed predecessor estimates. Test raw-only and genuinely absent-C layouts.

RC-07 — Figure 5 accepts a partial month grid silently (medium)

`figures.yaml:99-107` requires months 1..12 per F/S/C/T. `figure5.py:9-20` checks arms, duplicates and range, but not exact grid completeness. One available month per arm rendered `figure5-incomplete.pdf` with no exception or missing-result note (`adversarial_checks.py:224-242`). The event figures already enforce their exact grid at `_render_support.py:100-106`.

Fix: require exactly 12 explicit month rows per arm, or one explicit unavailable panel marker with a reason. Test complete, missing, duplicate, and unavailable interfaces.

Per-Atom coverage and disposition

Atom	What genuinely ran or was checked	Review disposition
atom-000001	Raw synthetic case/version resolution, first qualifying index, sanction arms, release priority/ties, legal clocks, age limits, observability, month-start risk sets, censor months, Stage-B thresholds, density and balance were exercised.	Substantive implementation, but RC-02/04/05 can falsely clear its source/lineage/check gates; RC-07 affects its bound figure. Global U01-U06/U15 still block empirical Stage B.
atom-000002	Actual fixest T event profile, equal-bin contrast, CR1/Wald output and raw hazards ran in the authored suite.	U07 is a genuine narrow gap: no complete hazard-ratio band or honest complete archive exists. RC-01/02/03 must be fixed so a fake archive cannot replace it.
atom-000003	Pooled and arm models, main/placebo covariance, both screens, all verdict branches, conditional donut/composition/heaping paths, and person-FE alias handling were tested; dummy-matrix/cluster inference agreed.	Numerically meaningful, not runnable through an honest native chain until U07 is resolved. RC-01/03/04 affect code, predecessor and panel fidelity. U11 matching/reweighting/reset/heterogeneity details remain explicit, not silently approximated.
atom-000004	H3a independent-arm variance, H3b within-S covariance, C release reuse, a distinct decision+60 model, and partial siblings were exercised directly.	RC-06 breaks the normal raw-input copied-layout path for the supported decision anchor. U09 genuinely blocks family-level adjusted adjudication, not component estimates.
atom-000005	Binary classification gates and actual 999-person bootstrap ran; E4's independent three-way hand fixture recovered 0.5, 0, -0.5 and pair differences.	Supported kernels exist. U08 mappings/model-to-level and U09 multiplicity remain scoped. RC-01/02/03/04 affect trustworthy launch/input.

Atom	What genuinely ran or was checked	Review disposition
atom-000006	Baseline-employed membership and explicit E6 target rows were exercised.	No numerical E6 model is present, but U10 genuinely omits continuity, concurrent-workplace, denominator and interaction choices. Blocking this target is more faithful than treating all starts as mobility. RC-01/02/03/04 still affect the shell.
atom-000007	Conditional log-wage, four-year within-person annual wage, exact 180-day survival-share paths, missing optional siblings and CR1 inference ran.	The executable siblings are retained. E1 hours, hire selection/first-full-month, censoring/missing ends, units/quantiles and family counting remain U09/U12 rather than guessed. RC-01/02/03 apply globally.
atom-000008	Month-start PTI classification, overlap/absence boundaries and the actual joint state-block event model were compared with an independent covariance oracle.	Supported implementation exists; U13's complete historical codes and overlap priority are genuinely missing. RC-01/02/03/04 affect trustworthy execution.

Unresolved and untested limits

Numerical study results remain unavailable because U01-U06, U15/editorial acceptance, and the promised complete source scripts are unresolved. U07 prevents honest completion of Atom 2 and native treated activation. U08-U13 remain scoped as described above; U14 disclosure transforms/authorization are unavailable and RC-02 means the current clearance mechanism cannot establish them. These are not empirical nulls, equivalence, or boundaries observed in data.

Installed Python numerical packages were available except Polars. R 4.1.2, fixest 0.12.1 and R arrow 18.1.0.1 were available; R is below the governed requirement of 4.3. Stata was absent, so the promised fallback was not tested. `pdflatex` was present, but

Helvetica Neue resources were absent; figure tests used the code's local DejaVu testing mode. I did not test governed R ≥ 4.3 execution, final-font rendering, full-register scale/memory, real disclosure cells, or any actual source-author approval record. No packages were installed and no shared environment was changed.

Acceptance after repair would mean faithful tested engineering within these explicit limits—not observed science, replication success, approval of the old protocol, or permission to run on real data.

r01 / opus.md

Independent reference-code review — reviewer opus, round 1

Verdict: revise. Two confirmed defects with narrow fixes, plus one smaller one and a documentation nit. The estimator and inference layer is faithful and independently verified; the disclosure control and the Stage-B abort path are not yet.

This is an engineering and source-fidelity review of newly written reference code. It is not scientific acceptance of the frozen source protocol, not replication, and not observed science. I requested no new experiments and no change to any registration.

0. What is actually under review

```
diff -rq .controller/source v001/world
Only in v001/world/prereg: engineering
Only in v001/world/prereg: execution
```

The reviewed World differs from the immutable original package by exactly two additions. Every Atom, the Molecule, all shared definitions, the replication/deviation records, the manuscript, the figure bindings and all six figure implementations are byte-identical to the frozen package. No executable sibling was removed — there was no prior `prereg/code/`. All 15 `[[RESULT:...]]` manuscript slots remain unfilled and no code path writes them.

Working method: I copied the World to `scratch/r01/opus/work/world` and the code to `work/exec`, and drove everything from there. At the end of the review the copy is still byte-identical to `v001/world`, and the World still differs from the frozen source only by the two added directories. Nothing outside my scratch was written.

The frozen study is a *source-protocol conversion* of an unpublished Stage-1 registration (`prereg.yaml` v1.0, 2026-08-21, commit `aa65f6764ddf`): a statutory-clock event study of the Danish *straffeattest*, confirmatory family `{H1}` alone, guarded by a placebo-anniversary equivalence gate at the Amendment-A2 -0.01 screen and an arm-T never-disclosed kill gate estimated placebo-first under an estimation-order lock.

1. Per-Atom coverage

Atom	Implemented numerics I executed and verified	Reachable local states	Genuine blocks
atom-000001 Clock and cohort	Full raw→Stage-B chain through the real CLI on my own register fixture: same-case appeal resolution, first-observed- guilt screen, A3 traffic screen, C same-case/fallback release linkage, legal-vintage month clocks, 18–55 eligibility, 12-pre/6-post observability, whole-month censoring, bounded 43-month person panels, all seven check computations and dispositions, density, balance, scope. Reached scope_fsc .	boundary , scope_fs , scope_fsc , otherwise — all reachable; I hit boundary (hazard outside 1–15 %) and scope_fsc	U01–U06, U15, full-script deposit; finding 2 makes the whole deliverable unobtainable when any unresolvable later appeal exists

Atom	Implemented numerics I executed and verified	Reachable local states	Genuine blocks
atom-000002 Traffic battery	Real arm-T event LPM through the CLI: 43/43 event coefficients, delta_T = 0.026648643178632768, se = 0.031747047889738374, persons 49, risk person-months 863. Verified against my own oracle to 1e-16 / 7e-11.	only otherwise	U07 — the hazard-ratio band has no source estimand, so archive-record.json is permanently complete: false
atom-000003 H1	Pooled + F/S/C models, main/placebo covariance, donut and anticipation branches, person-FE alias detection, heaping and constant- composition variants, and the full literal claim-gate table. Verified: 6210 verdict scenarios × 2 screens, 0 mismatches; all 8 non-otherwise verdicts exercised including exact ties.	none via CLI	blocked by atom-000002's archive; finding 3 in claim_gates

	Implemented numerics I executed and verified	Reachable local states	Genuine blocks
Atom			
atom-000004 Schedule	H3a independent-arm difference, H3b joint-covariance contrast (verified to 1e-9 against a single joint contrast vector), H3c/E7_release reuse, separately dated decision+60 panel.	partial/otherwise	U09 family decisions; E7 tested unit
atom-000005 Industry	Exact prefix classifier, pre-estimation hire/cell/workplace gate, real 999-replication person-cluster bootstrap, three-class kernel. theta verified to 1e-10 against my own oracle.	reporting_boundary/ partial/otherwise	U08 partial/otherwise 5 % missingness, percentile convention; F4 model-to-level map permanently unavailable
atom-000006 Mobility	baseline-employed membership at event month -1 only; no estimator	only otherwise	U10 — genuinely under-specified (no job-to-job risk set, continuity rule, concurrent- workplace rule or interaction parameterization; AJO_ARBNR_SENR documented only to 2017-12)

Atom	Implemented numerics I executed and verified	Reachable local states	Genuine blocks
atom-000007 Job quality	E1 log-wage OLS, E2 within-person four-year annual difference, E3 exact 180-day survival, all with CR1.	partial/otherwise	E1 hours winsorization conflict (U12), U09 family
atom-000008 Benefit audit	Joint block equation, separate per-state event/calendar/duration/arm terms, one shared person-cluster sandwich. Verified to ~1e-11 against my own block- matrix OLS; only the between-state difference carries a p-value, as registered.	reported/partial/otherwise	UTBewls map, completeness, overlap priority

2. The headline limitation, stated plainly

No numerical result of this study is available, and this bundle cannot produce one.

The chain is: U07 leaves the arm-T hazard-ratio estimand, the LPM-to-ratio map and the “tightest band around 1 excluded at 90 % CI” undefined → **traffic_components** always writes **archive-record.json** with **complete: false** → atom-000002’s registered **archived_positive** and **archived_other** regions both *require* “its specified non-gating band are complete and immutably archived before treated-arm output” → atom-000002 can only realize **otherwise** → atoms 3–8, whose activation requires **state(atom-000002) {archived_positive, archived_other}**, never activate.

There is an apparent contradiction here that a reader could mistake for a defect, so I want to resolve it explicitly. The source calls the band “explicitly non-gating”. That is about H1’s *verdict*: the band’s value never feeds the kill gate. But the source’s **estimation_order_lock** says the arm-T battery is archived “BEFORE any treated-arm output is produced or inspected, **including the TOST equivalence band**”,

and the frozen atom-000002 registration encodes that by putting band completeness inside the archived states. So the band gates H1's *launch*, not H1's verdict. The code is faithful. This is a registered blocked target, not an implementation failure.

I verified this is not merely an activation artefact. With every global gate resolved and genuine chained predecessor evidence supplied, `--dispatch-policy direct` on atoms 3–8 still stops at `run.py:91–98` with “*Required original complete T archive unavailable (including U07 band)*” and writes **zero** estimate values into any CSV. Direct dispatch does exactly what the README claims: it bypasses the outer activation expression and nothing else.

On top of this, U01–U06, U15 and the full-script deposit are unresolved global gates, so even Stage B cannot legitimately begin. Every number I produced exists only because I supplied my own synthetic resolution documents.

3. Findings

Finding 1 (major) — the registered 5-persons disclosure floor is never applied to two person-count outputs, and the sample flow is emitted per case

`run.py:200–204` keys the small-cell suppression on the *presence of a column literally named persons*:

```
elif manifest["purpose"]=="governed" and "persons" in table:
    mask=(table.status=="available") &
    ↪ (pd.to_numeric(table.persons,errors="coerce")<5)
```

`sample-flow.csv` carries its counts in `count`. `cohort-summary.csv` carries its person count in `value` (`pipeline.py:162, unit="persons"`). Neither has a `persons` column, so neither is ever masked.

Separately, `construction.resolve_cases:82–83` appends **one flow row per (PERSON_ID, JOURNR) group** with a hard-coded `"count": 1`, and `pipeline.py:108` concatenates that unaggregated frame straight into the sample flow — while its two siblings are aggregated with `groupby(...).size()`. The appeal-resolution step is therefore a unit-record listing.

Executed (my fixture #2: 240 synthetic persons, `purpose=governed`, valid clearance descriptor, atom-000001 reaching `scope_fsc`):

```
sample-flow rows exported: 252 of 252 | rows with count<5: 240 | min: 1
cohort-summary person rows exported: 4 (unmasked)
density rows withheld for <5 persons: correctly withheld in fixture #1
```

`density.csv` is the control: it happens to carry a `persons` column and *is* correctly withheld with the reason “*Source cell <5 persons; U14 supplies no authorized collapse algorithm*”. That isolates the cause to the column-name test, not to the governed branch as a whole. I also confirmed the counterfactual: without a clearance descriptor every available row is correctly withheld.

Registered rules violated: `governance.md:27` (“5 persons/cell ... No ... unique-case listings leave”), source `prereg.yaml` `disclosure.minimum_cell_size` and `outputs_leaving_environment` (“The sample-flow table, counts only above the minimum cell size”), atom-000001’s protocol (“source thresholds are ≥ 5 persons”). And the bundle’s own README asserts the behaviour it does not implement: “*Known <5-person cells remain withheld even with that descriptor.*”

Why it survived: `grep -c governed prereg/execution/run_tests.py` $\rightarrow$ 0. The only `purpose=` value anywhere in the suite is “synthetic”. The entire governed/clearance/withholding branch is untested.

A second gap in the same ledger, verified in the same run: persons whose only decision carries a sanction code outside the four arm sets vanish with no exclusion row at all. `construction.indices:93` filters on the `GUILT` set before any flow accounting, so they are dropped between the appeal-resolution step and the arms step. My fixture contains 3 persons with `AFG_AFGTYP3 = 112` (partially suspended):

step	exclusion	rows	persons	
appeal_resolution	retained	35	35	
arms	NaN	4	32	<- the 3 are gone, with no
↪ exclusion row				

Both `prereg.yaml` (exclusion criterion 1 names 112, 113, 115, 116, 118 and the 311–323 series) and the deposited `extraction_skeleton.R:81,109–110` require these to be counted in the mandatory sample-flow table.

A third fidelity point: `count` mixes units. The `arms` and `eligibility` steps count persons; the `appeal_resolution` step counts cases.

Fix. (a) Aggregate the appeal-resolution frame to the registered grain before concatenation and label the counting unit per step. (b) Make the `<5` guard independent of an accidental column name — declare per output which column holds the person count, or add an explicit `persons` column to both frames. (c) Emit a counted exclusion row for decisions whose sanction code falls outside the four arm sets, so the ledger reconciles across steps. Do not invent a collapse rule; U14 supplies none, so `withheld` with the existing reason is correct. **Regression test:** governed manifest + valid clearance, cohort containing a 3-person exclusion cell; assert those rows return `status == "withheld"` with null counts, that no exported row has `count < 5`, that `purpose="synthetic"` is unaffected, and that retained cases at the appeal-resolution step equal arms plus counted non-arm-sanction exclusions.

Finding 2 (major) — one unresolvable later appeal aborts all of Stage B

`construction.indices:109–111` raises a `Boundary` that propagates out of `construct()`:

```
unresolved_later=other.loc[~other.JOURNR.isin(g.JOURNR)]
if len(unresolved_later):
    raise Boundary("STOP_UNRESOLVED_SOURCE: later unresolved case affects
    ↪ conviction censoring", ...)
```

Executed, function level. 41 index persons — 20 plain, 20 with a *resolvable* later appealed case, 1 with an unresolvable one:

```
appealed cases=21 unresolvable=1 rate=0.0476 -> inside the registered
↳ check-4 <=0.05 threshold
indices() RAISED Boundary(status='pre_data_unresolved')
control (0 unresolvable): 40 index rows OK
```

Executed, CLI level. Fixture #2 plus one unresolvable later appealed case on a single person (0.42 % of 240):

```
terminal: pending | state: None | reason: STOP_UNRESOLVED_SOURCE: later
↳ unresolved case ...
quality-checks rows: 7 | statuses: ['pre_data_unresolved']
sample-flow: one unavailable row
scope.json: {"scope": null, ...}
```

The identical fixture without that one row reaches `scope_fsc`. Because atoms 2–8 all require `state(atom-000001) {scope_fs, scope_fsc}`, one record blocks the whole Molecule.

This contradicts the registration the code implements. `atom-000001`’s own protocol: “Record warnings and scoped contingent flags *without turning them all into global stops*.” `data-contract.md` check 4 sets the threshold at “unresolved appeals 5 % of appealed” with a written-reconciliation disposition — and the bundle *implements* that check at `pipeline.py:133` and `quality.check_disposition`. The source treats these as ordinary exclusions: “*Appealed decisions with no resolvable final-instance row (appeal rule; counted in the sample-flow table)*.” The hard raise means the registered measurement can never be taken, in exactly the regime it was written for.

I accept the author’s stated intent (implementation report: “*unresolved later cases cannot silently disappear from censoring*”). The defect is the blast radius, not the intent.

Same pattern, lower frequency: `indices:98-99` raises globally when one person has two distinct cases decided on the same date. I verified an unrelated clean person is lost with them.

Fix — the invariant, not a mechanism. What I am asking for is: *one ambiguous record must not abort the cohort, and check 4 must remain computable*. Which mechanism restores that is a registered choice for the author to make and disclose, not for a reviewer to impose. Two candidates, both already implied by source text:

- (i) **Censor** that person at the month of the earliest observed guilt-with-sanction `AFG_AFGOEDTO` of the unresolved case, keeping the case in the ledger under the existing `unresolved_appeal` label. *For:* `prereg.yaml` keys censoring on the decision event (“censored at the month of any new decision of guilt with sanction”) while the appeal/final-instance rule is scoped to the *index* clock origin; and `extraction_skeleton.R` treats the two as separate concerns — section 2 flags `appeal_unresolved := AFG_ANKEDTO nonmissing & no final row` per row, section 6 states the censoring rule with no final-instance qualification. *Against:*

the source’s parenthetical rationale, “a new conviction statutorily resets the disclosure clock”, arguably points at a final-instance date, which is exactly what an unresolvable appeal lacks.

- **(ii) Scope the unresolved marker** to that person and exclude only them from the risk-set panel with their own counted exclusion category. *Against:* excluding on a post-baseline event is precisely what `prereg.yaml` warns about (“Censoring at the month of any new decision of guilt (not exclusion of the person-history after the fact)”).

Pick one, record it as a disclosed engineering resolution of a source-silent point, and keep the other visible. Apply the same scoping to `indices:98-99`.

Regression test: the 20/20/1 fixture asserting 41 index rows, that the unresolved later case still drives censoring, `appeals_unresolved = 1/21` with disposition `pass`, and `stage_b` reaching a scope state; plus a 2/21 (9.5 %) companion asserting the registered `stop` disposition fires instead. Shipped as `scratch/r01/opus/mytests/falsify_indices.py`, which currently fails against the bundle with the exact Boundary message above.

Finding 3 (minor) — `claim_gates` identity tests silently downgrade a firing kill gate

`inference.py:65-68` uses `if kt is True`, `if kill_p is True`, `if kt is not False`. `kt` comes from chained comparisons at line 48; with numpy scalars those yield `numpy.bool_`, and `np.True_ is True` is `False`.

Same numbers, two input types (an arm-T kill that should fire):

```
python floats : {'K_T': True, ..., 'registered_verdict': 'traffic_kill'}
numpy scalars : {'K_T': True, ..., 'registered_verdict': 'otherwise'}
```

The emitted row is self-contradictory: the kill flag reads `True` while the verdict reads `unresolved`, and the Molecule restriction keyed on `state(atom-000003) == "traffic_kill"` — “Withdraw the causal ceiling” — would not fire.

Reachability, precisely: **not** on the shipped `run.py` path, where all four dicts arrive via `json.loads` as Python floats. Reachable through the documented public callables `analyses.h1_components(..., traffic=...)` / `inference.claim_gates`, which is the natural way to honour the protocol instruction “Copy the T estimate by reference, not re-estimation” from the archived `contrasts.csv`.

Fix. Coerce the four gate values with `bool(...)` where not `None`, or replace the identity tests with truthiness plus an explicit `is None` branch. **Regression test:** the numpy-scalar kill scenario asserting `traffic_kill`, a `K_P` counterpart, and an unknown-comparator case asserting `K_T is None → otherwise`. Shipped as `scratch/r01/opus/mytests/falsify_numpy_gates.py`, which currently fails with “`K_T=True with verdict!=traffic_kill is self-contradictory`”.

Finding 4 (minor, documentation) — stale headline test numbers

The report’s “Main command (successful full run)” block says 29 methods in 175.921 s; the shipped `run_tests.py` gives **31 methods in 268.224 s** here. The report elsewhere explains that 31 methods exist across several runs, so this is staleness rather than misrepresentation, but the quoted command no longer matches its quoted numbers.

4. What I verified positively, with my own tools

The author suite passes here (31 tests, 268.224 s, exit 0) — but a passing author suite is self-consistency, not an oracle. Note also that the author’s own Stage-B test substitutes a `SyntheticInputs` subclass overriding both `get` and `value`, so it never exercises the real parquet loader, field-lineage validation or resolution-document binding. I therefore built two register-extract fixtures with real parquet files and real source-resolution documents and drove the real CLI.

Estimator and inference fidelity — independent oracles I wrote:

All seven are saved as runnable files under `scratch/r01/opus/mytests/` and can be re-run.

Quantity	Reference code	My independent implementation	Agreement	File
<code>delta_T</code> , event LPM + CR1	<code>estimators.R</code> / <code>fixest</code>	<code>statsmodels</code> dummy OLS + hand-built person-cluster sandwich with $G/(G-1) \cdot (n-1)/(n-K)$	est 9.7e-17 , se 7.2e-11	<code>oracle_cr1.py</code>
H3b via $se^2 + se^2 - 2cov$	<code>analyses.scheduling</code>	single component contrast vector <code>c_main</code> - <code>c_plac</code> on the arm-S sandwich	est 5.8e-15 , se 9.9e-10 , cov 6.7e-12	<code>oracle_h3b.py</code>
E5 two-state block model	<code>estimators.R:efficient_results</code>	block-matrix OLS, state- interacted FE, one shared person cluster	est ~1e-11 ; se 2.9e-8 abs, 1.2e-6 rel (dense pinv vs absorbed solver)	<code>oracle_e5.py</code>

Quantity	Reference code	My independent implementation Agreement	File
H2 theta	<code>estimators.R</code>	randomly point-10 own equal-bin contrast to the raw cause-specific pre-hazard	<code>oracle_theta.py</code>
atom-000003 verdict table	<code>inference.claimy</code>	gates transcription of the registered regions, 6210 scenarios $\times$ 2 screens	<code>verdict_grid.py</code>
Holm step-down	<code>inference.holm</code>	independent step-down, 2000 random families	<code>verdict_grid.py</code>

Against the deposited source code. `estimators.R` opens by claiming to be a “meaning-preserving completion of `analysis_skeleton.R::fit_event_lpm` and `window_contrast`”. I read both deposited skeletons and checked. The skeleton’s model is `feols(y ~ i(event_month, ref = -1) | cal_ym + spell_dur_fe + arm, cluster = ~PERSON_ID)`; `estimators.R::fit_event` builds the identical formula, reference bin, FE set and cluster, and its `window_contrast` is exactly the linear-combination Wald the skeleton leaves as an empty stub. The contrast windows, the two kill rules, H3b, theta, the 999-replication percentile bootstrap and the `R >= 4.3 / fixest >= 0.11` requirement all match verbatim. The skeleton’s estimation-order comment independently corroborates my archive-first reading: step (1) is the arm-T battery “*incl. the TOST band*”.

One genuine **source-author code disagreement** surfaced: the skeleton hard-codes `arm` FE unconditionally, while `prereg.yaml` specifies “arm fixed effects in pooled models” only. `estimators.R` makes it conditional on `pooled` and therefore follows the governing YAML, which `NOTE.md` declares controlling (“where it and any other file could be read differently, it governs”). The resolution is correct; it is simply not recorded in `deviations.md`, which does record several other plan-vs-YAML conflicts.

`extraction_skeleton.R` corroborates both major findings independently: lines 60–61 and 109–110 say unresolvable appeals are “*EXCLUDED and counted in the*

sample-flow table” and that the output is “*the mandatory sample-flow table (all exclusion counts, including unresolvable appeals and arm-T sanction-screen exclusions)*”; line 81 names 112/113/115/116/118 and 311–323 among the excluded codes. Its section 2 flags `appeal_unresolved` as a per-row field while section 6 states the censoring rule with no final-instance qualification.

One derivation worth recording because it is implicit in the code and easy to mis-read as a bug: **arm S’s registered placebo window is its 24-month non-clearing horizon contrast**. S clears at decision+36, so event month -12 is decision+24, and the placebo contrast ($-12..-7$ vs $-18..-13$) is exactly `delta_S(24m)`. `H3b = delta_S(36m) - delta_S(24m)` is therefore correctly computed from the single S model’s main/placebo joint covariance, matching the source’s “joint person influence functions”. My oracle confirms it numerically.

Contract, identity and dispatch — all executed by me:

- Five CLI rejections (output inside World / non-empty output / invalid purpose / field outside the frozen candidate set / non-parquet path) → **exit 2** with the registered messages.
- Absolute-path invocation from an unrelated cwd → exit 0; `--help` exits 0 without reading observations.
- **Requirement 6, both directions**. Mutating `atom_result`, `atom_strength`, `bonds` and `molecule rating/draft` still runs. Byte changes to `data-contract.md`, `identification.md`, `governance.md`, `literature.md`, `replication/deviations.md`, `paper/results-map.md`, `paper/figures.yaml`, `paper/figures/figure1.py`, an Atom’s preregistration payload and molecule membership all → exit 2. Uncovered (verified, and defensible — these are derived views the code never consumes, whose authoritative content lives in the hashed molecule frontmatter): `prereg/interpretation.md`, `prereg/storyline.md`, `prereg/manifest.yaml`, `prereg/epistemic-graph.yaml`, `prereg/paper/paper.md`, `prereg/CHECKSUMS.sha256`.
- **Evidence forgery**. Integrity flip → “Corrupt predecessor result”; artifact tamper → “Corrupt predecessor artifact”; wrong `registration_id` → “Wrong predecessor registration/source/input binding”; synthetic evidence under `purpose=governed` → “Synthetic evidence cannot authorize governed execution”. All exit 2.
- **Requirement 5**. 8 Atoms $\times$ 2 dispatch policies on the empty manifest; then all gates resolved with genuine chained evidence. `direct` never manufactured an estimate.
- **Missing software reported honestly**. R 4.1.2 is below the registered R 4.3; `estimators.R:196` refuses governed numerical calls, and a governed atom-000002 run returned `status: no_result, reason: "Registered R >=4.3 unavailable"` with no substituted number. No Stata engine exists, so the registered Stata fallback is unvalidated. All my numerical verification therefore ran under `purpose="synthetic"`.

Figure / result-slot interfaces, driven with my own reference-code outputs (not author fixtures): all six unchanged renderers produced 1-page PDFs at 370.49 pt = 130.7 mm. F2 is the interesting case — it renders a real arm-T event profile

beside three explicitly unavailable F/S/C panels carrying the exact reason “*Required original complete T archive unavailable (including U07 band)*”, with no fabricated flat series. That is precisely what the F2 caption demands and what requirement 5 is guarding against.

5. Things I looked at and decided *not* to file

- **U06 left-censored spell duration blocks the whole model.** `spell_dur_fe` is null for risk-set months whose spell began before observable coverage, and the R engine refuses rather than doing complete-case analysis. In one fixture 63 of 3369 risk-set months (1.9 %) killed every arm-T coefficient. This is the registered stance — `data-contract.md` forbids the audit-proposed 37+/censored bin and any workaround — so it is a source limit, not a defect. But it means pooled H1 is not estimable on any realistic extract until U06 is resolved, and that belongs in the acceptance record.
- **Industry missingness 5 % blocks all of atom-000005** (0 % runs, 0.1 % blocked, 6 % runs). Perverse, but atom-000005’s frozen protocol says in terms that “the primary treatment at $\leq 5\%$ are unfinished source choices, not guessed here.”
- **The inclusive risk-set rule drops day-one hires.** A fixture with all starts on the 1st gave a measured pre-period hazard of exactly 0 in all four arms. The code preserves the source rule as `data-contract.md` demands and implements check 5, the registered diagnostic for it. Source consequence, not a code defect — but load-bearing for real BFL data.
- **Signed denominator in K_T / K_P .** A positive arm-T estimate trivially clears $0.5 \times \text{delta}_F$ when $\text{delta}_F < 0$. Real, but disclosed (“Source signed denominators and strict/inclusive inequalities are retained”; atom-000003: “With nonpositive main/F estimates the source’s signed comparison still applies; report this rather than silently repair it”), and it only bites where the science is already dead. Interpretation disagreement, not a bug.
- **The “contributes 1 non-employed person-month” inclusion criterion** has no explicit exclusion step in the sample-flow ledger. Cosmetic given finding 1’s rework of that file.
- **atom-000006 has no estimator.** I checked whether E6 was implementable and concluded it is not: the panel carries workplace identifiers only on job-start months, so a job-to-job “move” would require an employed-month workplace state the source never specifies, plus a concurrent- workplace rule and an interaction parameterization it never gives. Genuine, narrowly scoped gap.

6. Why revise and not accept

accept means faithful tested engineering within explicit limitations. The construction, estimator and inference layers earn that: five independent numerical oracles agree to

1e-9 or better, the registered verdict table is exact across 6210 scenarios including its tie cases, registration identity discriminates correctly in both directions, direct dispatch cannot manufacture a number, and the blocked targets are honestly labelled rather than filled.

But finding 1 is a defect in a registered disclosure control that the bundle's own README claims to implement, reachable through the documented governed path, and completely untested — on a study whose entire output discipline rests on that floor. Finding 2 makes the primary Atom's whole Stage-B deliverable unobtainable under a condition the registration explicitly budgets for, and silently disables the registered check that was written to measure it. Both are narrow, both have obvious regression tests, and neither requires touching the frozen protocol.

Fix those three code defects with their tests and correct the two documentation statements, and this becomes an accept.

Artifacts: scratch/r01/opus/ — mytests/ (fixture generators, five independent oracles and two falsifying regression tests, all runnable), fx/, fx2/, fx3/ (register fixtures, resolution documents, manifests), out/ (all CLI runs and rendered figures), testout/ + testout_stdout.log (author suite run), work/ (read-only World copy and code copy). Nothing was written to the World, the original package, controller files, another reviewer's outputs or repository resources. No real data, no old empirical session, no QGPU, no network access, no subagents, no commit/push/release.

r02 / opus.md

Independent adversarial reference-code review — opus, round 2

Verdict: revise. Engineering and source-fidelity only. Not scientific acceptance of the frozen source protocol, not observed science, not replication. I read both round-1 reviews and the author's round-2 revision; I did not read the round-2 co-reviewer.

What changed, exactly

`diff -rq .controller/source v002/world` — the reviewed World still differs from the immutable original package by exactly two additions, `prereg/engineering/` and `prereg/execution/`. No Atom, Molecule, shared definition, replication/deviation record, manuscript, figure binding or figure implementation was modified or deleted; no executable sibling was removed.

`diff -rq v001/world v002/world` — the round-2 delta is 8 edited execution files and 7 new ones. Hunk counts: `construction.py` 1, `inference.py` 1, `analyses.py` 2, `quality.py` 2, `contracts.py` 5, `pipeline.py` 7, `run.py` 7, `run_tests.py` 6. New: `authority.py` (144), `disclosure.py` (100), `evidence_contracts.py` (153), `input_contracts.py` (139), `figure_interface.py` (32), `revision_tests.py` (310), `implementation-manifest.json`. `estimators.R` is byte-identical, so round 1's

fixest/CR1, H3b, E5 block-covariance and H2 theta oracle verification carries over unchanged; I re-verified the one numerical surface that did change (`inference.claim_gates`) with my own oracle instead of re-spending the 5-minute suite. `README.md` and `implementation-report.md` are also byte-identical — that is finding 2.

Every prior finding: independently re-tested, all genuinely fixed

I re-tested each with my own falsifying case, not the author's test.

Prior finding	Round-2 status	My evidence
r01-opus-1 <5 floor never applied	fixed	Governed CLI + valid signed clearance, cohort with 54 sub-5 rows of 55: 0 sub-5 cells released , min released persons 7. Round 1 exported 240 sub-5 rows. <code>cohort-summary.csv</code> now carries persons ; 4 of 12 rows withheld, min released 5
r01-opus-1(b) appeal rows at unit-record grain	fixed	<code>construction.aggregate_flow; count == persons</code> on every row, no <code>PERSON_ID/JOURNR</code> column survives, <code>release_table:54</code> refuses them outright
r01-opus-1(c) non-arm codes vanish from the ledger	fixed	<code>excluded_sanction</code> row with <code>count = 3</code> appears; my own ledger probe with 4 unresolvable appeals + 3 excluded-sanction persons reconciles exactly: $37 = 33 + 4$
r01-opus-2 one unresolvable appeal aborts Stage B	fixed	My independent 20/20/1 fixture: 41 index rows, <code>appeals_unresolved</code> 1/21 → pass , 2/21 → stop , the affected person censored at 2012-05-04 rather than dropped

Prior finding	Round-2 status	My evidence
r01-opus-2(b) same-day dual index takes unrelated persons	fixed	Only the affected person is excluded; the clean person survives
r01-opus-3 is True identity tests on numpy scalars	fixed	<code>inference.py:60</code> bool coercion; numpy and float paths byte-identical on 124,420 scenarios See finding 2
r01-opus-4 stale engineering report	NOT fixed	
RC-01 execution code outside any trusted identity	fixed	Tampered <code>inference.py</code> in a copied action → exit 2; rewriting the copied deposit does not help; World-side tamper also exit 2
RC-02 hashed text asserts resolution/clearance	fixed	A “DENIED” file is refused: “Authority record must be typed JSON, not an unverified document”
RC-03 incomplete self-authored T archive authorizes treated analysis	fixed	Forged complete archive refused: “Complete T archive contains unavailable/nonfinite bins”
RC-04 unrelated schema substitutes for the panel	fixed	All-IND panel, y from job END, single-field <code>arm</code> each refused with an exact message
RC-05 scope clears on one benchmark stratum	fixed	One stratum → 36 coverage rows, 35 unresolved, otherwise . Verified against <code>prereg.yaml:1713-1721</code> that the frozen roster is exactly F/S/C/T × 2009-2017
RC-06 atom-4 cannot construct its own decision+60 panel	fixed	<code>run.py:117-124</code> ; <code>E7_decision</code> no longer reports “Distinct decision+60 panel required”

Prior finding	Round-2 status	My evidence
RC-07 F5 renders incomplete grids silently	fixed	<code>figure_interface.validate_density</code> refuses a 1-month-per-arm grid

Per-Atom coverage

- **atom-000001** — Full raw → case resolution → index → arms → legal clocks → eligibility → bounded panel → Stage-B chain executed through the real CLI in both synthetic and governed purpose. All seven checks measured; the 36-stratum coverage roster materialised; the disclosure floor verified at CLI level; the flow ledger verified to reconcile. Governed chaining out of this Atom is where finding 1 bites.
- **atom-000002** — Executed; `archive-record.json` stays `complete: false` under U07 on every path. `evidence_contracts.validate_traffic:84` now refuses to accept a complete T archive at all, which I confirm is deliberate and stated in the code.
- **atom-000003** — 124,420-scenario independent claim-gate oracle, 0 `registered_verdict` mismatches, all nine verdicts exercised including the exact $p = .05/.01$ and $|z| = 1.96/2.576$ ties. Blocked at the T archive under direct dispatch, 0 numeric cells emitted.
- **atom-000004** — Local decision+60 construction verified (`clearing_month == clock_origin + 60` months); available siblings survive a missing predecessor. Blocked at the T archive.
- **atom-000005** — Blocked at the T archive; F4 renders as an explicit gap with its exact reason. Numerical kernels unchanged from round 1.
- **atom-000006** — No E6 estimator by design (U10). Blocked at the T archive.
- **atom-000007** — Verified that an absent optional `annual` input is component-scoped: all four targets keep rows with reasons and the run does not stop. Blocked at the T archive.
- **atom-000008** — Blocked at the T archive; `estimators.R` block-equation code byte-identical.

The three findings

1 (major) — the disclosure fix broke governed chaining. The root error is a boundary confusion: U14 governs outputs *leaving the secure environment*, but the gate is applied at `run.py`'s disk-write boundary, where nothing leaves anything — so it redacts the artifacts the next Atom in the same environment must read. Under `purpose=governed` with a signed authority configuration and no export clearance, atom-000001 completes with `state: scope_fsc` while `release_table/release_json` null `quality-checks.csv:quantity` and set `scope.json:scope` to null. Handing that genuine, correctly attested result to atom-000002 exits 2 with “*Shared scope contradicts bound Stage-B evidence*” — an accusation of tampering — because `evidence_contracts.validate_predecessor:115-134` recomputes the state from

the artifacts this same code redacted. **Omitting the evidence succeeds.** The one workaround requires an export clearance on internal chaining artifacts (contradicting README.md:296-298) whose `content_sha256` is taken over a frame that `run.py:196-208` builds privately and never writes; I only got the chain to complete after reimplementing those thirteen lines in my own harness. `grep -c governed run_tests.py` is still 0 and no test chains two Atoms under governed purpose.

2 (major) — the shipped documentation no longer describes the shipped code. A manifest built verbatim from README.md:70-94 is rejected: “*Named input requires a source-bound construction lineage record: decisions*”. README `grep` counts are **zero** for `lineage`, `attestation`, `content_sha256`, `persons_by_row`, `minimum_persons`, `approval_state`, `implementation-manifest` and `--authority`. `implementation-report.md` is byte-identical to v001: it names none of the six new modules, still quotes “29 unittest methods ... 175.921 seconds” for a 41-method / 315 s suite, and still states that no reviewer findings were supplied. Round-1 opus finding 4 is unfixed and has widened. It also leaves undisclosed the one source-silent scientific resolution round 2 makes: `construction.indices` now censors at the earliest **raw** guilt-with-sanction decision date rather than the resolved final-instance date, for resolvable appeals as well as unresolved ones. I verified the code’s cited locator is exact (`prereg.yaml:526-529` — “censored at the month of any new decision of guilt with sanction”, no final-instance qualification), so the reading is defensible; but round 1 asked for it to be recorded as a disclosed engineering resolution, `deviations.md` is frozen inside `contracts.identity()`, and `prereg/engineering/` — the only writable disclosure surface — was not touched.

3 (minor) — Boundary escapes the CLI’s exit contract. A governed run without `--authority` gives an uncaught `contracts.Boundary` traceback and **exit 1**, as does a malformed clearance descriptor. README.md:24-26 promises exit 0 or exit 2 only. Fix: raise `ValueError` at `authority.py:52` (a missing runner trust config is an invalid command, not a source gap) and add `Boundary` to the `except` tuple at `run.py:256`.

What remains legitimately blocked, plainly

No numerical result of this study is available and none can be produced. U07 leaves the arm-T band undefined; the source’s estimation-order lock makes a complete archive a prerequisite for any treated-arm output; `atom-000002` can only realize **otherwise** and atoms 3-8 can never activate. I verified this is not an activation artefact: direct dispatch on atoms 3-8 with every gate resolved and genuine chained evidence stops at `run.py:96` and writes zero numeric cells. U01-U06/U15 and the full-script deposit remain unresolved global gates. R 4.1.2 is below the registered R 4.3 and governed numerical calls are correctly refused with an explicit reason rather than a degraded number; no Stata engine exists; Polars is absent. E6 and F4 have no source-defined model. `cryptography` 44.0.1 is present, so the new Ed25519 path was fully executable here.

One scoped residual, recorded rather than raised as a defect: the implementation pin’s trust root lives inside the directory it protects, so tampering the World’s execution code **and** regenerating its `implementation-manifest.json` is accepted

with an unchanged `registration_id`. The signed `full_script_deposit` record (`authority.py:89-91`) is the external binding that closes this, and I confirmed it rejects the changed `implementation_id`.

Proof artifacts

All under `scratch/r02/opus/` — `mytests/` (harness, imported from outside the pinned execution directory so the file-set pin is not disturbed), `out/` (run outputs and rendered PDFs), `authorsuite/` (the shipped suite’s own report), `work/` (my writable World copy and the v001→v002 diff). Nothing outside that directory was written; the reviewed World was never modified.

`accept` would mean faithful tested engineering within explicit limitations. The construction, estimator, inference, identity, evidence and figure layers now earn that — round 2 fixed all eleven prior findings and I could not break any of them. The governed export path and the operator-facing interface documentation do not yet.

r03 / opus.md

Round-3 independent engineering review — reviewer opus

Engineering and source-fidelity review of `prereg/execution/` and `prereg/engineering/` in v003/world. **Verdict: revise.** This is not scientific acceptance of the frozen source protocol, not observed science and not replication. Rounds 1 and 2 (both reviewers’ r01 files and my own r02 file) were read; the round-3 co-reviewer was not.

0. The fact that frames this round

`diff -rq v002/world v003/world` is **empty**. `.controller/r03-author.json` shows the round-3 implementation author exited with `returncode 1` after 3.7 seconds, and `logs/r03-author-a01.log` ends with **ERROR: You've hit your usage limit**. No revision was attempted, so no round-2 finding could have been fixed.

I have deliberately **not** filed that as a finding — it is a controller/infrastructure outcome, not a defect in the bundle — and I have equally not softened the verdict for it. The verdict is about the snapshot in front of me.

What that changes is what this round is *for*. Rather than resubmit round 2, I:

1. re-executed everything, so every result below is a round-3 execution, not a carry-over;
2. adversarially re-attacked my own round-2 findings — one of them changed shape;
3. built an **independent numerical oracle** for the confirmatory estimator instead of relying on round 1’s carry-over;
4. added **164 new reviewer-authored checks** in four new scripts;

5. re-read the exact cited public source locators for U07, U10/E6, F4 and the arm-fixed- effect disagreement, to test whether the alleged source gaps are genuine;
6. found one new minor defect.

`diff -rq .controller/source v003/world` still shows exactly two additions over the immutable original package (`prereg/engineering/`, `prereg/execution/`). No Atom, Molecule, shared definition, replication/deviation record, manuscript, figure binding, figure implementation or executable sibling was modified or removed. After all my testing, `diff -rq v003/world scratch/r03/opus/work/world` is still empty.

1. Findings

#	Sev	Where	Round	Claim
1	major	<code>run.py:214</code> / <code>evidence_contracts.py:115-134</code>	r02, re-framed	No internal-evidence channel: artifacts are written once through the U14 export gate, and the evidence contract recomputes the shared scope from the redacted copy, reporting an authorization gap as evidence tampering
2	major	<code>README.md:86</code> , <code>engineering/implementation-report.md</code>	r02	The documented in manifest is rejected by the code; the whole author-ity/lineage/clearance surface is undocumented; the engineering report is byte-identical to v001

#	Sev	Where	Round	Claim
3	minor	<code>authority.py:52</code> , <code>run.py:256</code>	r02	Boundary escapes the CLI rejection path: exit 1 + traceback where the README promises 0 or 2
4	minor	<code>construction.py:226,245</code>	new in r03	The guilt screen and the arm screen disagree on sanction-code dtype, and an empty post-arm cohort is reported as terminal no_result with the unrelated message “Missing required columns: PERSON_ID”

Finding 1, re-framed after self-challenge

In round 2 I argued that redacting `quality-checks.csv:quantity` and `scope.json:scope` under U14 was itself wrong. I deliberately attacked that this round and it does not hold: `data-contract.md:66` makes U14 an export gate, `run.py:209-210` calls these CSVs “the public/plot-ready interfaces”, and `paper/results-map.md` binds both files to manuscript slots. Withholding without a clearance is defensible.

The defect is one step further in. I grepped **every** artifact write site in `run.py` — `to_csv` at 215, `write_text` at 218, `interpretation.json` at 236, `result.json` at 240 — and there is no second, unredacted copy anywhere. The file the next Atom must read as *internal* evidence **is** the redacted *export*. `evidence_contracts.validate_predecessor` then rebuilds `metrics` from the nulled `quantity` column and raises “Shared scope contradicts bound Stage-B evidence”.

The decisive new evidence is a control I did not have in round 2. `mytests/r3_probes.py` runs the **identical** chain under `purpose="synthetic"`, where `release_table:53` / `release_json:88` return early: atom-000001 gives `scope_fsc` with `scope.json.scope` intact, and atom-000002 then **completes** with `state: "otherwise"` and a predecessor trace carrying `scope_fsc`. Same evidence contract, same fixture, same attestation shape — only the redaction differs. The contract is correct; it is being fed corrupted bytes by its own process. That points the fix at candidate (i) in the YAML — give `run.py` an explicit internal-evidence channel — rather than at loosening the predecessor check.

Blast radius, measured: atom-000001 → atom-000002 is the **only** governed chain this deposit can reach, because `run.py:93-96` blocks atoms 3-8 on the U07-unreachable T archive. `claim-gate-inputs.json` and `model-summary.json` travel the same `release_json` path, so the atom-3 → atom-4 leg carries the same latent fault — currently unreachable, not fixed.

Finding 4, new this round

`assign_arms:166` explicitly coerces a string sanction code, so the arm screen anticipates a string-typed `AFG_AFGTYP3`. The guilt screen at `indices:96` and `:115` compares against a set of Python ints and does not. Nothing validates the dtype — `validate_loaded` checks column names only.

The consequence is not just a wrong screen. An empty cohort reaches `legal_clocks:226,245`, which builds `pd.DataFrame(rows)` from a Python list and therefore returns a frame with **no columns at all**; `eligible:250` then raises `Boundary("Missing required columns: PERSON_ID", "no_result")`. End to end through the CLI (`mytests/r3_dtype_cli.py`), the same fixture gives:

```
int codes ->
↳ {"terminal":"completed","state":"scope_fsc","scientific_result":true}
str codes -> {"terminal":"no_result","reason":"Missing required columns:
↳ PERSON_ID"}
```

`no_result` is the strongest operational terminal here: `run.py:164` refuses to retry it, and with atom-000001 at `no_result` every other Atom reports `not_activated`. So a fixable input-typing problem becomes the whole study’s terminal no-result, under a message pointing at a person identifier that is present and correct. It fails **closed** — no wrong number is produced — which is why it is minor. A second, unrelated cause (an all-unclassifiable offence map) reaches the identical terminal, so the fix has two halves: make the two screens agree, and give the empty-cohort condition a reason that names it.

2. Per-Atom coverage

Every Atom was exercised through the CLI in both dispatch policies and from a **copied prereg/execution/ directory** (README:19-20 primary mode), all exiting 0 with their full artifact interface. Below, “reachable state” is what this deposit can actually realize.

atom-000001 — Clock and cohort

Reachable: `scope_fsc`, `scope_fs`, `boundary`, `otherwise` — all four, the only Atom with its whole verdict table live. *Tested:* 84 hand-computed boundary probes against `construction.py` with zero mismatches — age 18/55 in and 17/56 out at the clock origin; the 12-pre/ 6-post BFL rule exact at both endpoints; the inclusive **start first-of-month** end risk-set rule; all four censoring clocks censoring the whole

event month with earliest-exit precedence and age 60 able to remove month 0; left-censored duration staying unknown plus the 37+ cap; release / final-instance / hours ties and duplicate spine rows and person-months all refused; F/T = decision+24, S = decision+36, C = release+60; the 2009-01-01 / 2017-12-31 endpoints; pre-1980 rows neither index nor prior case; a prior observed guilt case blocking a spurious “first” conviction; the **GUILT** set exactly the union of the four arm code sets. Plus the sub-5 disclosure floor at CLI level (0 sub-5 cells released of 54 sub-5 source rows), the sample-flow ledger reconciliation ($37 = 33 + 4$), and the 36-stratum coverage roster. *Findings*: 1 (its redacted output is the broken evidence), 4 (its empty-cohort path).

atom-000002 — Traffic anniversary placebo

Reachable: **otherwise** only. **archived_positive/archived_other** require a complete T archive; U07 makes that unreachable by **construction** — **evidence_contracts.validate_traffic**:84 refuses to accept one even if handed a perfect archive. I confirmed the source gap is genuine, not under-implementation: **prereg.yaml**:988 records the band as Graft 9, and **prereg.yaml**:934-935 shows it was imported from the runner-up **cloglog** design that was not selected, so no LPM-to-hazard-ratio map exists anywhere in the source. *Tested*: the arm-specific fit carries **no** arm FE (independently confirmed by my oracle, matching atom-000002’s protocol and **prereg.yaml**:1215); a forged complete T archive is refused; **archive-record.json** always **complete**: **false**; the governed chain from atom-000001 (finding 1) and the synthetic control that completes. *Findings*: 1.

atom-000003 — H1 confirmatory contrast and both kill gates

Reachable: none — permanently **pending**, because **scientific_prerequisites** requires the atom-000002 archive under **both** dispatch policies. *Tested most heavily anyway, because it owns the confirmatory surface*. My independent NumPy dummy-OLS + QR person-cluster sandwich (**mytests/r3_oracle.py**, 60 persons / 2,580 person-months) matches **estimators.R** on all 42 event coefficients to 2.2e-13; the omitted -1 bin is a defined zero with no interval; **delta_main** = **mean(..)** — **mean(..)** with entering the pre-mean as zero and dividing by **six**, not five; the placebo contrast, the main/placebo covariance and the implied H3b variance all match; p and CI use the normal quantile, not t; **fixest** applies one global small-sample scalar with $K = 146$ = the full design rank, i.e. counting every absorbed FE level with no nested-cluster reduction — exactly what **README.md**:53 discloses. The residual ~1e-6 relative gap is the engine’s own **fixef.tol=1e-6**: **mytests/tol_probe.py** refits at **fixef.tol=1e-10** and then matches my oracle to ~4e-12 on every quantity. Separately, 124,420 claim-gate scenarios in float and numpy dtypes, including the exact $p = .05/.01$ and $|z| = 1.96/2.576$ ties: **0** mismatches on **registered_verdict**, all nine verdicts exercised. *Findings*: none of its own.

atom-000004 — Schedule migration (H3a/H3b/H3c/E7)

Reachable: **partial** / **otherwise** only. **corroborating/mixed/contrary/uninformative** all require “All components and family decisions available”,

and `family_ledger:141-143` writes `STOP_UNRESOLVED_SOURCE` U09 permanently. `run.state_for:147` implements exactly that cap — faithful, not a gap. *Tested:* H3b’s covariance identity independently ($m.se^2 + pl.se^2 - 2 \cdot cov$ equals the direct linear-combination variance of `c_main - c_plac`), which is the estimator behind “delta_S(36m) — delta_S(24m)” at `analysis_skeleton.R:66`; the independent decision+60 panel construction and its anchor validation; direct dispatch stopping at the T archive with zero numeric cells. *Findings:* none of its own.

atom-000005 — Industry signature (H2/E4)

Reachable: `reporting_boundary`, `partial`, `otherwise`. The Holm-decided states are U09-capped as above. *Tested:* the source `theta = delta_cert/h_cert_pre - delta_other/h_other_pre` structure against `industry_point/industry_results`; the 999-replication person-cluster bootstrap and R type-7 percentile convention gated on the source resolution; the 1000-hire and 3-workplace / 75%-share cell gates; F4 emitted as an explicit gap with its exact reason. I re-read `figures.yaml` figure4 and `results-map.md` and confirmed **the frozen package itself** registers F4 as unavailable and forbids a raw-mean substitute — honouring it is fidelity, not under-implementation. *Observation (not a finding):* if the certificate-intensive hire count is literally zero, the measured “hires <1000” boundary degrades to `pending` because no row is available. Every non-degenerate gate failure does report `reporting_boundary` (both branches verified), and `prereg.yaml:535-545` puts F at 50,000–120,000 persons, so this is unreachable. Recorded once; no fix requested.

atom-000006 — Employed-worker directed mobility (E6)

Reachable: `otherwise` only. *Source gap re-checked and confirmed genuine and narrowly scoped:* `prereg.yaml:886-897` fixes the estimand (new `AJO_ARBNR_SENR`, `[0,+5]` vs `[-6,-1]`, certificate-destination interaction, person-clustered LPM) but supplies **no** job-to-job risk set or employment-continuity rule and no interaction design, and `data-contract.md:13` documents `AJO_ARBNR_SENR` only for 200812-201712 against a cohort whose windows run past it. *Tested:* `mobility_components` reports the baseline-employed membership at event month `-1` that the source **does** establish (`baseline_persons`) and refuses both targets with the exact U10 reason. It fits no proxy. That is the correct scope. *Findings:* none.

atom-000007 — Job quality (E1/E2/E3)

Reachable: `partial` / `otherwise` (U09 family cap). *Tested:* the optional `annual` (IND) input absent leaves E1/E3 as **independent siblings** with their own reasons and does not become a global stop — the executable-sibling requirement, verified at CLI level; E1 hours permanently U12-blocked by the `winsorize-vs->400-missing` conflict; E2 requiring a source-verified DKK/year unit rather than a guessed currency scale; E3’s censored/missing job end refused rather than imputed. *Findings:* none.

atom-000008 — Benefit-state audit (E5)

Reachable: reported, partial, boundary, otherwise — **reported is genuinely reachable**, correctly, because `governance.md` makes E5 a single uncorrected test with no family decision, and `state_for:148-150` implements exactly that. *Tested:* the joint block equation's contrast vectors independently — each state's 0..5 average at +1/6 and -6..-2 at -1/6 with as the implicit zero, which is the same reference convention as `contrast_vector`; the PTI overlap-priority and historical code-map stops; the single audit p-value on the difference only, with state CIs retained. *Findings:* none.

3. What I re-verified rather than assumed

Every round-1 finding from both reviewers remains genuinely fixed, re-tested this round with my own falsifying cases (19/19 in `adversarial.py`, plus `gov_floor.py`, `ledger.py`, `rc04.py`, `req56.py`, `figs2.py`).

Round-1 RC-01's residual re-tested rather than restated. I checked whether the implementation pin's external root really binds *every* numeric path, or only some gate. `full_script_deposit` is in `pipeline.GLOBAL_GATES` and `predata_gate` runs before any observation on every Atom. Executed: a governed manifest built without it returns `terminal: pending, reason: "STOP_UNRESOLVED_SOURCE: full_script_deposit"`, zero numeric cells and a null scope; and `authority.validate_resolution` refuses a deposit naming any other `implementation_id` (four malformed variants). Round 2's decision to scope this as a residual rather than an open defect was correct, not soft.

Registration identity in both directions (12/12): eight protocol/material tampers and a World execution-source tamper all exit 2; in-place realized Atom-body and Molecule-rating edits still run; absolute-path invocation from an unrelated cwd works.

Native dispatch semantics (new this round, direct unit coverage): NOT unknown is unknown; `done()` is false for `no_result/not_activated` and unknown for `pending/absent`; `state()` of an unrealized predecessor is unknown; five malformed activation expressions rejected without `eval`. Direct dispatch on all six downstream Atoms bypasses only the outer activation and still stops at the T archive with zero numeric cells.

Figure interfaces: all six unchanged renderers driven with actual reference-code outputs in synthetic **and** governed-withheld mode, all at 130.7 mm, one page each, no fabricated series.

4. What remains legitimately blocked, and what is untested

No numerical result of this study is available and none can be produced by this bundle. U07 is a property of the frozen registration, verified against the

exact source locators; atom-000002 can only realize **otherwise** and atoms 3-8 can never activate. Faithful blocked target, not a defect. U01-U06, U15 and the full-script deposit remain unresolved global gates and A1 editorial acceptance is unestablished by anyone. R 4.1.2 is below the registered R 4.3, so **estimators.R** correctly refuses governed numerical calls and all my numerical work ran under **purpose="synthetic"**. No Stata engine exists, so the registered **reghdfe** fallback is unvalidated. Polars is absent. Nothing was installed or replaced.

Untested by the bundle's own suite (re-measured): **grep -c governed run_tests.py = 0**; no shipped test chains two Atoms under **purpose="governed"**; no test asserts a returncode for a pre-try **Boundary**; no test supplies an input in a plausible alternative delivered type. Those three gaps are the direct causes of findings 1, 3 and 4.

Now covered by me independently (so no longer a carry-over): the CR1 sandwich, the equal-bin contrast algebra, the main/placebo covariance and H3b identity, normal-Wald inference, the pooled-only arm FE, the anticipation/donut windows, 84 cohort/clock/censoring/ tie boundaries, and the full Kleene semantics.

Still carried over from round 1 and *not* re-derived by me, stated so it is not read as mine: the E5 joint block-covariance oracle and the H2 999-replication bootstrap oracle. I executed the author-authored versions of both inside the 41-test suite this round, and **estimators.R** is byte-identical across v001/v002/v003, so the carry-over is sound.

5. Test ledger

Shipped suite, executed by me: **41 methods, 291.095 s, exit 0, test-report.json successful=true**, 0 failures, 0 errors. (This is author-authored — not an independent oracle.)

Reviewer-authored, all executed this round:

Script	Result
gov_chain.py	FAILS the bundle — finding 1
gov_chain2.py	FAILS the bundle — finding 1(b) , clearance unreachable
gov_chain3.py	control: passes only after reimplementing run.py:196-208
boundary_escape.py	FAILS the bundle — finding 3 , rc=1 + traceback ×2
readme_manifest.py	FAILS the bundle — finding 2 , exit 2 on the documented manifest
r3_dtype_cli.py	FAILS the bundle — finding 4 ; §B is the positive copied-layout CLI run and passes for all eight Atoms

Script	Result
r3_oracle.py	PASS 23/23 — independent estimator oracle
tol_probe.py	PASS — matches at <code>fixef.tol=1e-10</code> to $\sim 4e-12$
r3_boundaries.py	PASS 84/84 — cohort/clock/censoring/tie boundaries
r3_probes.py	PASS 57/57 — pin root, synthetic control, dispatch, Kleene, atom-5 edge
adversarial.py	PASS 19/19 — all round-1 fixes hold
gov_floor.py	PASS — 0 sub-5 cells released
verdict_grid.py	PASS — 124,420 scenarios, 0 registered_verdict mismatches
req56.py	PASS 12/12 — identity, siblings, path independence
figs2.py	PASS 12/12 — six renderers, both modes
ledger.py	PASS — sample-flow reconciles
rc04.py	PASS — see labelling note below
pin_residual.py	LIMITED — scoped residual, not a defect

Two labelling notes for anyone reading the raw logs. (a) `rc04.py`'s shared printer emits `FAIL control: correct full lineage (expected ACCEPTED) -> ACCEPTED` — the control's expected outcome *is* acceptance, so that line is a print-label artifact of my own r02 harness, not a bundle failure. (b) `pin_residual.py` exits nonzero because the harness re-validates the original World from its own `sys.path` after tampering a copy; that is the harness, not the bundle.

Everything I wrote lives under `scratch/r03/opus/`; nothing outside it was touched.

6. What revise means here

Three narrow code defects and one documentation defect, each with a named regression test in the YAML. It is **not** a scientific rejection, not a comment on the frozen source protocol, and not a request for new experiments, definitions, robustness or any change to the registration. Given that the round-3 author never ran, three of the four are round-2 defects I re-executed rather than carried forward, and the fourth is new. Nothing here should be read as replication, as observed science, or as approval of the original design.

Complete registered Molecule

```
id: molecule-000001
molecule_mode: prereg
molecule_shape: convergent
topic: Record clearing employment
rating: C
draft: false
membership:
- atom: atom-000001
  role: secondary
  description: The legal clock and common risk-set validity jointly constrain
    every substantive experiment. This is one consequential shared validity
    judgment, with documentation tasks and the seven routine checks inside
    it, not an Atom per missing appendix.
- atom: atom-000002
  role: secondary
  description: This is an independent falsification battery with a legally
    distinct comparison population, a compulsory archive-first order, and
    a non-gating equivalence-band target. Its scientific evidence is
    ↪ independently
    reportable. Comparison with F is a later H1 claim gate, not this Atom's
    activation.
- atom: atom-000003
  role: primary
  description: H1, its within-cohort placebo, both post-estimation kill
    ↪ comparisons,
    raw descriptive profiles and routine sensitivity variants jointly answer
    one confirmatory question. H0 is an interpretation of H1's interval, not
    another experiment. Arm-specific estimates required to adjudicate H1 stay
    here and are reused by schedule analysis.
- atom: atom-000004
  role: supplementary
  description: H3a/H3b form the source migration question and H3c/E7 jointly
    assess its custodial anchor. Related arm profiles are inputs, not separate
    experiments; independent F/S information is retained if C is unavailable.
- atom: atom-000005
  role: supplementary
  description: H2 and E4 concern one industry-proxy mechanism judgment on
    the same risk set. E4 refines that proxy and its division-84 sensitivity
    stays inside the unit. E6 remains distinct because it concerns
    ↪ already-employed
    workers and a different behavioral margin.
- atom: atom-000006
  role: supplementary
  description: E6 tests an independent worker-search margin in those employed
    at month -1, distinct from job finding among the non-employed and from
    an industry split of those hires.
- atom: atom-000007
  role: supplementary
  description: E1-E3 jointly describe the source job-quality/earnings module.
    Hours and wages, within-person annual wages, and match survival remain
    distinct estimands and component results; missing annual income must not
    erase match evidence.
- atom: atom-000008
  role: supplementary
  description: E5 is a distinct consequential audit of a benefit-clock
    ↪ alternative
    explanation, using month-start PTI states. It stays exploratory and cannot
    repair a failed H1 falsification.
```

```

literature: []
frontier:
  rule: A criminal conviction depresses employment long after the sentence
        is served, and record-sealing, clean-slate, and ban-the-box policies rest
        on the premise that the record itself - not the person - does part of
        the damage. Does scheduled expiry change job finding?
  avoid: No new design, hypotheses, thresholds, outcomes, historical legal
        guesses, statistical remedies or outcome-based selective reporting.
  directions: []
preregistration:
  mode: adaptive
  question: Does scheduled expiry of disclosure on a Danish private
    ↪ criminal-record
    certificate change job-finding among previously convicted people?
  scope: 'Causal - but for exactly one registered quantity: the effect of
    reaching the statutory private-certificate clearing date on the employee
    job-finding hazard (pooled F+S+C), licensed solely by the confirmatory
    H1 discontinuity surviving both registered disconfirmation gates (the
    placebo-anniversary equivalence gate with its alpha-0.01 screen per
    ↪ Amendment
    A2, and the arm-T never-disclosed kill gate, estimated placebo-first).
    The power-driven fixed-point demotion of H2, H3, and H3c to the
    ↪ exploratory
    tier NARROWS this ceiling relative to the original design: fine-grained
    attribution of the jump to certificate clearing specifically - as against
    residual disclosure-arm-specific timing institutions - is presented as
    strongly consistent with the gate structure and the embedded
    ↪ 24/36/60-month
    cross-arm alignment, and is upgraded in prose by exploratory
    ↪ schedule-migration
    corroboration only with the explicit label that such corroboration is
    exploratory. Mechanism attribution to employer information sets is capped
    a further level down at consistent-with (worker-side awareness of the
    date is inseparable in principle and is apportioned, not excluded, via
    the exploratory H2/E4/E6 signature). No predictive or generality claims
    (Danish statutory certificate regime; employee jobs only). If either kill
    gate fires, the ceiling drops to associational/descriptive and the prose
    follows it down; exploratory results can never raise the ceiling.'
  storyline: The single study asks whether scheduled expiry of
    ↪ private-certificate
    disclosure changes employee job finding. Shared measurement validity first
    defines the admissible cohort and source-contingent F+S+C/F+S scope. The
    never-disclosed T battery is archived before H1. H1 then supplies main
    and F estimates needed for both post-estimation claim gates. Schedule
    migration and the industry/worker-search signatures are exploratory; job
    quality and the benefit-clock audit retain their independent descriptive
    content. All estimates, unfavorable and unavailable outcomes, and every
    registered member remain visible. No graph edge requires a main-relative
    placebo comparison before that main estimate exists.
interpretation:
- kind: restriction
  condition: 'TRUE'
  says: All interpretations are conditional on frozen historical legal
    ↪ encoding,
    valid measurement and local smoothness. Employer-information mechanism
    is at most consistent-with; no generality or prediction beyond Danish
    employee jobs. No independent scientific acceptance exists for this
    source-protocol conversion.
- kind: restriction
  condition: state(atom-000001) == "boundary"

```

says: Report shared measurement/cohort failure and all unactivated
↳ members;
no empirical or null conclusion.

- kind: restriction
condition: state(atom-000001) == "scope_fs"
says: H1 scope is the source-contingent F+S sample, documented before treated outcomes. C remains wholly exploratory and linked-subset
↳ limitations
must be disclosed.

- kind: restriction
condition: state(atom-000003) == "both_kills" OR state(atom-000003) == "traffic_kill" OR state(atom-000003) == "anniversary_kill"
says: 'Withdraw the causal ceiling. Report all main, placebo and
↳ exploratory
estimates as descriptive/associational, preserving the actual direction and significance of H1. Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.'

- kind: restriction
condition: state(atom-000003) == "supported_sensitive"
says: 'Place the alpha-.05-screen implied verdict beside registered A2 support; disclose screen dependence, not a tightened gate. Source
↳ planning
simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.'

- kind: restriction
condition: 'TRUE'
says: 'Source conditional robustness restrictions compose from the
↳ Atom-owned
component ledger: anticipation requires worker-retiming wording; heaping sign/significance change foregrounds the exclusion estimate; reset
↳ difference
>one primary SE restricts to reconviction-free scope; comparator and composition warnings stay visible. Missing components do not acquire favorable meanings.'

- kind: primary
condition: state(atom-000003) == "supported_stable" OR state(atom-000003) == "supported_sensitive"
says: 'Consistent with H1: positive source scheduled-date hazard effect under the maintained assumptions. Only that quantity may carry the
↳ source
causal ceiling; specific certificate attribution is strongly
↳ consistent-with,
and employer-side attribution remains consistent-with. Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity.'

- kind: primary
condition: state(atom-000003) == "negative"
says: 'Contrary to H1: the significant negative estimate disconfirms the predicted increase. Report diagnostics and limits; never reinterpret it as support.'

- kind: primary
condition: state(atom-000003) == "bounded"
says: No evidence for the predicted increase; give the 95% upper CI bound

- in probability/percentage-point units and relative units if defined.
Bound, never accept, the null; persistent characteristics are a possible interpretation, not established mechanism.
- kind: primary
condition: state(atom-000003) == "not_supported"
says: Positive main contrast alone is insufficient for support. Report the failed support clause; do not label every non-kill gate failure design failure.
 - kind: supplementary
condition: done(atom-000002)
says: Report the T estimate, full archived profile and single non-gating band with their precise availability status. No null equivalence is inferred from a nonsignificant T estimate.
 - kind: supplementary
condition: done(atom-000004)
says: Report H3a/H3b and H3c/E7 separately, including
→ mixed/opposite/unavailable cases. Core corroboration is exploratory; low-power nonsignificance is uninformative, and both custodial anchors jumping is
→ anniversary-suspect.
 - kind: supplementary
condition: done(atom-000005) OR done(atom-000006)
says: Combine only compatible H2/E4 and E6 signatures, preserving their distinct populations and all discordances. Negative/absent industry signature weakens employer attribution; employed mobility is consistent with worker retraining, not an identified causal share.
 - kind: supplementary
condition: done(atom-000007) OR done(atom-000008)
says: Describe E1-E3 outcome-specific quality/earnings evidence and E5 benefit-state audit independently. Neither changes H1 confirmatory
→ status.
 - kind: residual
condition: 'TRUE'
says: List all pending, not_activated, no_result, boundary, partial and source-unresolved targets with trigger traces. Unforeseen patterns
→ license
no new claim; no_result is not done and NOT unknown remains unknown.
The complete roster is never pruned.

The payload and member Atom registrations own the preregistration. Membership contains all eight pending Atoms.

Current interpretation

All Atoms are registered and pending. No experimental findings exist. No independent reviewer has accepted this conversion. Current evidence does not cite pending registrations as results.

atom-000001: Clock and cohort

Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are

traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. prereg/data-contract.md fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; prereg/identification.md fixes the maintained assumptions, estimator and inferential ceiling; prereg/governance.md fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal `no_result`; `not_activated` records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global `atom_result`.

Scope, sequence and output ownership

Source locators: prereg.yaml population; data; analysis_plan.preprocessing/contingent_decisions/missing_data/outcome_neutral_checks; timeline Stage 0/B. Execution plan S1-S14 and exhibits T1-T3/F5-F6 supply operational detail only where consistent with the YAML. A1-A4 take precedence over its stale variable lists.

Before Stage B: establish A1 editorial-adjudication disposition without claiming it is known; freeze the historical legal-vintage memo, all exact source-required code tables and complete extraction/analysis scripts. The source requires dating horizons/coverage unambiguously for cohort windows covering at least 80% of expected 2009-2017 decisions. The weighting denominator for expected decisions is unfinished; do not substitute observed outcomes or make one up. Unresolved gates in data-contract.md block dependent work before data access. No data application is made by this author. Stage A is inherited planning history and is not rerun or represented as current evidence.

After those prerequisites, execute source extraction/joins/cohort construction and seven checks in data-contract.md. Stage B outputs descriptive sample flow, arm demographics, quality measurements, density and boundary composition; it must not

produce any hypothesis-relevant event coefficient or near-clearing outcome comparison. The source calls these outcome-neutral, although some checks use prescribed baseline outcome levels; this author does not execute them. Record warnings and scoped contingent flags without turning them all into global stops. A C linkage rate below 90% arms the F+S contingency; industry missingness and composition warnings do not halt H1.

Outputs (all future governed): atom-000001/sample-flow.csv (source T1; step, exclusion, arm, cohort_year, count, status, reason; includes appeal, sanction-screen and C observability losses); cohort-summary.csv (T2; arm, variable, category, value, unit, status, reason); quality-checks.csv (T3; check_id, stratum, quantity, threshold, reconciliation, disposition, status, reason); scope.json (scope_fsc or scope_fs only when evidenced, complete prerequisite and warning ledger); density.csv (F5; arm, calendar_month 1.12, share as fraction, status, reason); balance.csv (F6; covariate predeclared KOEN category or five-year age band, std_difference signed, status, reason). Density and balance produce no p-values. Plot renderer displays absolute standardized differences against 0.10 without changing the stored signed value. No schematic or simulated bars enter these files.

The unresolved register crosswalk, historical legal interpretation, final-instance ranking and left-censored spell duration are constituent prerequisites of this scientific judgment; they are not separate experiments. Absence of those materials in this conversion keeps execution pending, without manufacturing a boundary finding.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace $>75\%$ for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```
id: atom-000001
topic: Clock and cohort
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
concepts: []
literature: []
bonds: []
preregistration:
  version: 1
```

```

mode: adaptive
question: Can the source disclosure clock and shared analysis cohort be
  established within the registered measurement and quality limits?
rationale: The legal clock and common risk-set validity jointly constrain
  every substantive experiment. This is one consequential shared validity
  judgment, with documentation tasks and the seven routine checks inside
  it, not an Atom per missing appendix.
assumption: The source assumptions and unresolved choices in
  ↪ prereg/identification.md
  and prereg/data-contract.md are maintained, not empirically validated
  by this conversion.
target_strength: descriptive
target_shape: comparison
ratings:
  importance: 3
  novelty: 1
  feasibility: 1
  data_advantage: 3
  informativeness: 0.0
tables:
- KRAF
- KRIN
- BFL
- BEF
- CPST
- VNDS_UD
- IND
- OF
activation: 'TRUE'
verdicts:
- key: boundary
  region: After authorized checks, source Stage-0 80% rule fails, or a
  ↪ load-bearing
  Stage-B stop threshold is unreconciled; first match. Missing pending
  documents alone do not establish this state.
  says: Stop empirical progression and report the precise measurement or
  cohort boundary; no causal or null finding.
- key: scope_fs
  region: All shared Stage-0/pre-IPA prerequisites are frozen and common
  Stage-B requirements cleared; observed custodial release linkage <90%;
  source-contingent F+S registration is documented before treated
  ↪ contrasts.
  says: Use F+S for H1; preserve all feasible C analyses as exploratory
  and disclose the linkage rate.
- key: scope_fsc
  region: All shared prerequisites and Stage-B requirements cleared;
  ↪ observed
  custodial release linkage >=90%.
  says: F+S+C is the registered pooled scope; diagnostics do not prove
  ↪ identification.
- key: otherwise
  region: otherwise
  says: Required evidence remains unresolved; no downstream authorization
  from assumed availability.
protocol: |2

  ## Shared execution contract (incorporated by reference)

```

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit
 ↪ aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL
 ↪ conversion on 2026-09-05, not replication of a published empirical
 ↪ paper. Source target labels below are traceability only; this Atom ID
 ↪ owns identity, activation, protocol and local states. No independent
 ↪ reviewer has accepted the conversion. prereg/data-contract.md fixes
 ↪ the shared cohort, fields, joins, all seven Stage-B checks and unreso
 ↪ lved pre-data gates; prereg/identification.md fixes the maintained
 ↪ assumptions, estimator and inferential ceiling; prereg/governance.md
 ↪ fixes multiplicity, disclosure and failure reporting. Read these with
 ↪ this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing
 ↪ source specification is an unresolved pre-data gate, not an observed
 ↪ data gap, statistical null, or permission to use a default. A
 ↪ documented empirical boundary can receive a local boundary state only
 ↪ after a permitted check actually establishes it. An attempted
 ↪ operation that produces no scientifically adjudicable evidence has
 ↪ terminal no_result; not_activated records its activation trace.
 ↪ Neither counts as done. Subcomponents that remain unestimable retain
 ↪ their own exact reason and all available components remain reported.
 ↪ Never convert missing or disclosure-withheld numbers into zero. An
 ↪ unavailable optional component cannot erase independently
 ↪ interpretable estimates; where the source explicitly makes its
 ↪ completion a prerequisite (Stage-0/Stage-B clearance; arm-T
 ↪ archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed
 ↪ execution artifact directory, never a claimed runtime mount. They are
 ↪ not created in this pre-data World. Each output row carries target,
 ↪ component, status, reason, inferential_tier, unit, sample_scope, and
 ↪ source_locator; available estimates carry estimate, se, lower, upper,
 ↪ p_raw, p_adjusted where defined, persons and risk_person_months where
 ↪ applicable. Include one row for each required unavailable target.
 ↪ Local states are evaluated first-match in listed order; component
 ↪ results and all claim restrictions remain visible even when one state
 ↪ takes precedence. The final otherwise catch-all means unresolved
 ↪ evidence, never support or equivalence. Graph keys do not overwrite
 ↪ source statements or global atom_result.

Scope, sequence and output ownership

Source locators: prereg.yaml population; data;
 ↪ analysis_plan.preprocessing/contingent_decisions/missing_data_rule;
 ↪ outcome_neutral_checks; timeline Stage O/B. Execution plan S1-S14 and
 ↪ exhibits T1-T3/F5-F6 supply operational detail only where consistent
 ↪ with the YAML. A1-A4 take precedence over its stale variable lists.

Before Stage B: establish A1 editorial-adjudication disposition without
 ↪ claiming it is known; freeze the historical legal-vintage memo, all
 ↪ exact source-required code tables and complete extraction/analysis sc
 ↪ ripts. The source requires dating horizons/coverage unambiguously for
 ↪ cohort windows covering at least 80% of expected 2009-2017 decisions.
 ↪ The weighting denominator for expected decisions is unfinished; do
 ↪ not substitute observed outcomes or make one up. Unresolved gates in
 ↪ data-contract.md block dependent work before data access. No data
 ↪ application is made by this author. Stage A is inherited planning
 ↪ history and is not rerun or represented as current evidence.

After those prerequisites, execute source extraction/joins/cohort
 → construction and seven checks in data-contract.md. Stage B outputs
 → descriptive sample flow, arm demographics, quality measurements,
 → density and boundary composition; it must not produce any hypothesis-
 → relevant event coefficient or near-clearing outcome comparison. The
 → source calls these outcome-neutral, although some checks use prescrib-
 → ed baseline outcome levels; this author does not execute them. Record
 → warnings and scoped contingent flags without turning them all into
 → global stops. A C linkage rate below 90% arms the F+S contingency;
 → industry missingness and composition warnings do not halt H1.

Outputs (all future governed): atom-000001/sample-flow.csv (source T1;
 → step, exclusion, arm, cohort_year, count, status, reason; includes ap-
 → peal, sanction-screen and C observability losses); cohort-summary.csv
 → (T2; arm, variable, category, value, unit, status, reason);
 → quality-checks.csv (T3; check_id, stratum, quantity, threshold,
 → reconciliation, disposition, status, reason); scope.json (scope_fsc
 → or scope_fs only when evidenced, complete prerequisite and warning le-
 → dger); density.csv (F5; arm, calendar_month 1..12, share as fraction,
 → status, reason); balance.csv (F6; covariate predeclared KOEN category
 → or five-year age band, std_difference signed, status, reason).
 → Density and balance produce no p-values. Plot renderer displays
 → absolute standardized differences against 0.10 without changing the
 → stored signed value. No schematic or simulated bars enter these files.

The unresolved register crosswalk, historical legal interpretation,
 → final-instance ranking and left-censored spell duration are
 → constituent prerequisites of this scientific judgment; they are not
 → separate experiments. Absence of those materials in this conversion
 → keeps execution pending, without manufacturing a boundary finding.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformation
 → s, row-count reconciliation, software and seed (execution plan
 → specifies 20260818), estimator/contrast definitions, exclusions,
 → activation traces, component statuses and archive timestamps. All
 → rows remain inside the governed environment. Only cleared aggregate
 → outputs feed figures; source thresholds are >=5 persons, additionally
 → >=3 workplaces and no workplace >75% for workplace/industry
 → tabulations. No invented disclosure aggregation algorithm: the source
 → promises collapse to other/adjacent-bin presentation, but exact
 → collapse precedence remains a pre-data gate where consequential. No
 → microdata, model fits, simulations, or newly observed estimates are
 → produced in this conversion. Synthetic plotting-interface checks are
 → permitted outside the World and must never populate manuscript slots.

Can the source disclosure clock and shared analysis cohort be established within the registered measurement and quality limits?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See prereg/replication/conversion-audit.md.

Reference implementation

Entry point and supported/unresolved components for `atom-000001`: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.

atom-000002: Traffic anniversary placebo

Shared execution contract (incorporated by reference)

The scientific authority is source `prereg.yaml` v1.0, 2026-08-21, commit `aa65f6764ddf`, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. `prereg/data-contract.md` fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; `prereg/identification.md` fixes the maintained assumptions, estimator and inferential ceiling; `prereg/governance.md` fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal `no_result`; `not_activated` records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global `atom_result`.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18, k \neq -1} \beta_k 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in pooled F+S+C (or source-contingent F+S) only}$. Use $R \geq 4.3$, `fixest::feols` ≥ 0.11 , OLS LPM, person-cluster CR1 covariance; primary has no person FE and no other covariates. The deposited

Stata reghdfe fallback is only promised; its complete identical specification must be frozen before execution. No new software versions or physical paths are inferred. For any contrast, retain the omitted -1 coefficient as the defined reference zero and form its registered equal-bin linear combination and covariance, not raw pooled-window hazard means. The simulation's ratio-of-totals calculation is not a replacement estimator. $\text{delta} = \text{mean}(\text{beta}[0:5]) - \text{mean}(\text{beta}[-6:-1])$; $\text{delta_plac} = \text{mean}(\text{beta}[-12:-7]) - \text{mean}(\text{beta}[-18:-13])$. Estimate $\text{SE} = \sqrt{c' V_{\text{CR1}} c}$ and the registered two-sided Wald p and 95% CI. Missing/unidentified bins needed for a contrast are a nonestimability boundary; do not average only available bins. Raw binned hazards are separate descriptive outputs. Exact source-silent implementation choices remain in the pre-data gate ledger.

Arm-T battery and ordering

Source locators: prereg.yaml analysis_plan.estimation_order_lock/estimator, H1 kill_criterion[arm T], design.grafts_adopted_from_runner_up G4/G9; execution plan 4.1 and T5/F2. Use only sanction-screened arm T, pseudo-time-zero final-instance decision +24 months under the historical table. Fit the arm-specific hazard LPM without arm FE; calculate delta_T and archive all monthly coefficients -24..+18 and pre-window smoothness profile. Do not impose a new pretrend test or cutoff. Compute once and export one source TOST-style 90% hazard-ratio interval, explicitly non-gating. Its precise LPM-to-hazard-ratio transformation and definition of the tightest band around 1 are not supplied; U07 is an unresolved pre-data implementation gate, and a guessed ratio or rejected runner-up [0.95,1.05] bound is prohibited. Non-gating means the band's value cannot stop a result; the source still requires it to be archived before treated estimates. Failure to specify it is a completion gap, not evidence that T is flat.

Write atom-000002/event-coefficients.csv (arm=T, event_month, estimate/lower/upper in probability units, status, reason), hazard-levels.csv (arm=T, event_month, hazard fraction, status, reason), contrasts.csv (delta_T , se, p_raw, 95% CI), equivalence-band.csv (one interval, scale=hazard_ratio, confidence=0.90, lower, upper, precise method reference, status, reason), archive-record.json (completed targets and timestamps). T5 reports the battery. F2 uses coefficients and F3 uses raw binned hazards. Do not label F2's T panel flat before data.

Only after atom-000003 produces delta_F can the source kill be evaluated: $\text{delta_T} > 0$ AND $p_{\text{T}} < 0.05$ AND $\text{delta_T} \geq 0.5 * \text{delta_F}$. This comparison is owned within atom-000003's protocol and Molecule restrictions. No T-versus-F ratio or kill outcome appears in this Atom's activation or prerequisites. The matched-T sensitivity, requiring F's baseline hazard, is retained internally in atom-000003 after both arms can be seen; original T remains unchanged.

Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity. ## Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace $> 75\%$ for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```

id: atom-000002
topic: Traffic anniversary placebo
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
concepts: []
literature: []
bonds: []
preregistration:
  version: 1
  mode: adaptive
  question: What anniversary pattern occurs in the source never-disclosed
    traffic-fine arm before any treated-arm estimate is inspected?
  rationale: This is an independent falsification battery with a legally
    ↪ distinct
    comparison population, a compulsory archive-first order, and a non-gating
    equivalence-band target. Its scientific evidence is independently
    ↪ reportable.
    Comparison with F is a later H1 claim gate, not this Atom's activation.
  assumption: The source assumptions and unresolved choices in
    ↪ prereg/identification.md
    and prereg/data-contract.md are maintained, not empirically validated
    by this conversion.
  target_strength: descriptive
  target_shape: temporal
  ratings:
    importance: 3
    novelty: 1
    feasibility: 1
    data_advantage: 3
    informativeness: 0.0
  tables:
    - KRAF
    - BFL
    - BEF
    - CPST
    - VNDS_UD
  activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) ==
    "scope_fs")
  verdicts:
    - key: boundary

```

```

region: After authorized execution, required T battery cannot be
↳ scientifically
   obtained due to an evidenced source-defined measurement/estimability
   boundary.
says: Archive all available pieces and reason; the archive-first
↳ prerequisite
   is not satisfied.
- key: archived_positive
  region: Required T battery and its specified non-gating band are complete
    and immutably archived before treated-arm output;  $\Delta T > 0$  and
    ↳ two-sided
     $p_T < 0.05$ .
  says: T has a significant positive pseudo-date jump. Estimate H1/F next;
    no F-relative kill comparison is yet possible.
- key: archived_other
  region: Required T battery and band are complete and archived;
    ↳  $\text{not}(\Delta T > 0$ 
      and  $p_T < 0.05)$ .
  says: Archive the sign, CI and smoothness profile without accepting a
    zero effect; proceed to H1/F regardless of favorability.
- key: otherwise
  region: otherwise
  says: Partial or ambiguous T evidence is reported; complete archive-first
    requirements remain unresolved.
protocol: |2

```

Shared execution contract (incorporated by reference)

```

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit
↳ aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL
↳ conversion on 2026-09-05, not replication of a published empirical
↳ paper. Source target labels below are traceability only; this Atom ID
↳ owns identity, activation, protocol and local states. No independent
↳ reviewer has accepted the conversion. prereg/data-contract.md fixes
↳ the shared cohort, fields, joins, all seven Stage-B checks and unreso
↳ lved pre-data gates; prereg/identification.md fixes the maintained
↳ assumptions, estimator and inferential ceiling; prereg/governance.md
↳ fixes multiplicity, disclosure and failure reporting. Read these with
↳ this protocol. No source-silent choice may be filled at runtime.

```

```

All Atoms start pending, with no realized state or result. A missing
↳ source specification is an unresolved pre-data gate, not an observed
↳ data gap, statistical null, or permission to use a default. A
↳ documented empirical boundary can receive a local boundary state only
↳ after a permitted check actually establishes it. An attempted
↳ operation that produces no scientifically adjudicable evidence has
↳ terminal no_result; not_activated records its activation trace.
↳ Neither counts as done. Subcomponents that remain unestimable retain
↳ their own exact reason and all available components remain reported.
↳ Never convert missing or disclosure-withheld numbers into zero. An
↳ unavailable optional component cannot erase independently
↳ interpretable estimates; where the source explicitly makes its
↳ completion a prerequisite (Stage-0/Stage-B clearance; arm-T
↳ archival), that prerequisite remains binding.

```

All outputs named below are logical paths relative to a future governed
 ↪ execution artifact directory, never a claimed runtime mount. They are
 ↪ not created in this pre-data World. Each output row carries target,
 ↪ component, status, reason, inferential_tier, unit, sample_scope, and
 ↪ source_locator; available estimates carry estimate, se, lower, upper,
 ↪ p_raw, p_adjusted where defined, persons and risk_person_months where
 ↪ applicable. Include one row for each required unavailable target.
 ↪ Local states are evaluated first-match in listed order; component
 ↪ results and all claim restrictions remain visible even when one state
 ↪ takes precedence. The final otherwise catch-all means unresolved
 ↪ evidence, never support or equivalence. Graph keys do not overwrite
 ↪ source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{-1} \beta_k$
 ↪ β_k 1[event_month=k] + calendar-year-by-month FE + non-employment-
 ↪ spell-duration FE (1-36 individual months, 37+ pooled) + arm FE in
 ↪ pooled F+S+C (or source-contingent F+S) only. Use $R \geq 4.3$,
 ↪ `fixest::feols` ≥ 0.11 , OLS LPM, person-cluster CR1 covariance; primary
 ↪ has no person FE and no other covariates. The deposited Stata `reghdfe`
 ↪ fallback is only promised; its complete identical specification must
 ↪ be frozen before execution. No new software versions or physical
 ↪ paths are inferred. For any contrast, retain the omitted -1
 ↪ coefficient as the defined reference zero and form its registered
 ↪ equal-bin linear combination and covariance, not raw pooled-window
 ↪ hazard means. The simulation's ratio-of-totals calculation is not a
 ↪ replacement estimator. $\delta = \text{mean}(\beta_{0:5}) - \text{mean}(\beta_{-6:-1})$;
 ↪ $\delta_{\text{plac}} = \text{mean}(\beta_{-12:-7}) - \text{mean}(\beta_{-18:-13})$. Estimate $SE =$
 ↪ $\sqrt{c' V_{CR1} c}$ and the registered two-sided Wald p and 95% CI.
 ↪ Missing/unidentified bins needed for a contrast are a nonestimability
 ↪ boundary; do not average only available bins. Raw binned hazards are
 ↪ separate descriptive outputs. Exact source-silent implementation
 ↪ choices remain in the pre-data gate ledger.

Arm-T battery and ordering

Source locators: `prereg.yaml` `analysis_plan.estimated_order_lock/estimator`
 ↪ `r`, H1 `kill_criterion[arm T]`, `design.grafts_adopted_from_runner_up`
 ↪ G4/G9; execution plan 4.1 and T5/F2. Use only sanction-screened arm
 ↪ T, pseudo-time-zero final-instance decision +24 months under the
 ↪ historical table. Fit the arm-specific hazard LPM without arm FE;
 ↪ calculate δ_T and archive all monthly coefficients -24..+18 and
 ↪ pre-window smoothness profile. Do not impose a new pretrend test or `c`
 ↪ `utoff`. Compute once and export one source TOST-style 90% hazard-ratio
 ↪ interval, explicitly non-gating. Its precise LPM-to-hazard-ratio
 ↪ transformation and definition of the tightest band around 1 are not
 ↪ supplied; U07 is an unresolved pre-data implementation gate, and a
 ↪ guessed ratio or rejected runner-up [0.95,1.05] bound is prohibited.
 ↪ Non-gating means the band's value cannot stop a result; the source
 ↪ still requires it to be archived before treated estimates. Failure to
 ↪ specify it is a completion gap, not evidence that T is flat.

```

Write atom-000002/event-coefficients.csv (arm=T, event_month, estimate/lo_
↪ wer/upper in probability units, status, reason), hazard-levels.csv
↪ (arm=T, event_month, hazard fraction, status, reason), contrasts.csv
↪ (delta_T, se, p_raw, 95% CI), equivalence-band.csv (one interval,
↪ scale=hazard_ratio, confidence=0.90, lower, upper, precise method
↪ reference, status, reason), archive-record.json (completed targets
↪ and timestamps). T5 reports the battery. F2 uses coefficients and F3
↪ uses raw binned hazards. Do not label F2's T panel flat before data.

```

```

Only after atom-000003 produces delta_F can the source kill be evaluated:
↪ delta_T>0 AND p_T<0.05 AND delta_T>=0.5*delta_F. This comparison is
↪ owned within atom-000003's protocol and Molecule restrictions. No
↪ T-versus-F ratio or kill outcome appears in this Atom's activation or
↪ prerequisites. The matched-T sensitivity, requiring F's baseline
↪ hazard, is retained internally in atom-000003 after both arms can be
↪ seen; original T remains unchanged.

```

```

Source planning simulations only (not rerun here): placebo kill detection
↪ 0.472 at a true placebo jump of half the floor; arm-T kill detection
↪ 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire
↪ 0.0017 / 0.0242. These rates are not achieved empirical power or
↪ proof of validity.
## Reproducibility and disclosure

```

```

Future governed execution records input metadata/vintages, transformation_
↪ s, row-count reconciliation, software and seed (execution plan
↪ specifies 20260818), estimator/contrast definitions, exclusions,
↪ activation traces, component statuses and archive timestamps. All
↪ rows remain inside the governed environment. Only cleared aggregate
↪ outputs feed figures; source thresholds are >=5 persons, additionally
↪ >=3 workplaces and no workplace >75% for workplace/industry
↪ tabulations. No invented disclosure aggregation algorithm: the source
↪ promises collapse to other/adjacent-bin presentation, but exact
↪ collapse precedence remains a pre-data gate where consequential. No
↪ microdata, model fits, simulations, or newly observed estimates are
↪ produced in this conversion. Synthetic plotting-interface checks are
↪ permitted outside the World and must never populate manuscript slots.

```

What anniversary pattern occurs in the source never-disclosed traffic-fine arm before any treated-arm estimate is inspected?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See [prereg/replication/conversion-audit.md](#).

Reference implementation

Entry point and supported/unresolved components for atom-000002: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.

atom-000003: Clearing and job finding

Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. prereg/data-contract.md fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; prereg/identification.md fixes the maintained assumptions, estimator and inferential ceiling; prereg/governance.md fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal no_result; not_activated records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18, k \neq -1} \beta_k 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in pooled F+S+C (or source-contingent F+S) only}$. Use $R \geq 4.3$, $\text{fixest::feols} \geq 0.11$, OLS LPM, person-cluster CR1 covariance; primary has no person FE and no other covariates. The deposited Stata reghdfe fallback is only promised; its complete identical specification must be frozen before execution. No new software versions or physical paths are inferred. For any contrast, retain the omitted -1 coefficient as the defined reference zero and

form its registered equal-bin linear combination and covariance, not raw pooled-window hazard means. The simulation's ratio-of-totals calculation is not a replacement estimator. $\text{delta} = \text{mean}(\text{beta}[0:5]) - \text{mean}(\text{beta}[-6:-1])$; $\text{delta_plac} = \text{mean}(\text{beta}[-12:-7]) - \text{mean}(\text{beta}[-18:-13])$. Estimate $\text{SE} = \sqrt{c' V_{\text{CR1}} c}$ and the registered two-sided Wald p and 95% CI. Missing/unidentified bins needed for a contrast are a nonestimability boundary; do not average only available bins. Raw binned hazards are separate descriptive outputs. Exact source-silent implementation choices remain in the pre-data gate ledger.

Source-preserved H1 frozen statement, target and forecast

id: H1

tier: confirmatory

statement initial: Compared to the months immediately before a conviction's statutory certificate-clearing date, non-employed single-conviction individuals will show a higher monthly job-finding hazard (BFL job starts via AJO_JOB_START_DATO) in the months immediately after, while showing no comparable jump at placebo anniversaries of the same conviction (e.g., twelve months before the scheduled clearing date).

direction: positive

comparator: The same pooled disclosure cohorts' non-employed person-months in event months -6..-1 immediately before the scheduled clearing month (within-cohort event time); placebo contrast compares months -12..-7 against -18..-13 of the same cohorts.

exposure variable: Scheduled private-certificate clearing month: final-instance decision date (AFG_AFGOEDTO with the AFG_ANKEDTO appeal rule) + 24 months (arm F) or + 36 months (arm S); IND_LOESLDTO + 60 months (arm C), per the Stage-0 legal-vintage memo.

outcome variable: Monthly job-finding hazard: any BFL job start (AJO_JOB_START_DATO) in month m , conditional on non-employment at the first day of month m (no BFL compressed job covering the first of the month).

estimand: Among non-employed single-conviction individuals in the pooled disclosure cohorts (arm F: Criminal Code plus frozen drugs-offence fines; arm S: fully suspended sentences; arm C: unconditional custodial sentences), each person-month panel centered on that conviction's scheduled private-certificate clearing month, the change in the monthly job-finding hazard at the scheduled clearing month, holding calendar time and non-employment-spell duration fixed; jointly, the absence of any comparable change at the within-cohort placebo anniversary 12 months before the scheduled clearing month.

primary quantity: $\text{delta_main} = \text{mean}(\text{beta_k}, k \text{ in } 0..+5) - \text{mean}(\text{beta_k}, k \text{ in } -6..-1)$ from the event-time-bin coefficients of the stacked discrete-time hazard LPM; placebo contrast $\text{delta_plac} = \text{mean}(\text{beta_k}, k \text{ in } -12..-7) - \text{mean}(\text{beta_k}, k \text{ in } -18..-13)$. H1 is supported iff (i) $\text{delta_main} > 0$ with a two-sided Wald test at $\alpha = 0.05$ (person-clustered SEs; a significant negative estimate is disconfirming) AND (ii) the placebo-anniversary equivalence gate passes: delta_plac not significant at two-sided

$\alpha = 0.01$ ($|z_{\text{plac}}| < 2.576$) and $|\delta_{\text{plac}}| < 0.5 * \delta_{\text{main}}$. The alpha-0.01 screen is registration-stage Amendment A2 (the original alpha-0.05 screen was structurally capped at 0.9492; the trade-off is stated in full under amendments, and the alpha-0.05-screen gate is a mandatory Stage-2 sensitivity). Simulated power at the frozen floor effect: Wald component 1.0000; full support rule with the alpha-0.01 screen 0.9883.

forecast: point: $\delta_{\text{main}} = +0.35$ percentage points (an 8.8% relative rise on the assumed 4.0 pp baseline monthly hazard)

interval 90: $[-0.05, +1.00]$ percentage points

basis: Agent judgment anchored on: (i) the design’s frozen floor effect (+0.30 pp, 7.5% relative), deliberately set below the smallest published expungement estimates; (ii) Prescott & Starr (2019), whose Michigan set-aside gains are an order of magnitude larger but heavily selected; (iii) Agan, Garin, Koustas, Mas & Yang (2024), whose near-null US remediation effects are attributed partly to non-salience — Denmark’s mechanical certificate purge plus routine (but not universal) employer requests and an ex-ante-known date should sit between these poles, closer to the floor; (iv) attenuation risks from stale certificates and monthly smearing. The 10% left tail below zero reflects genuine uncertainty about whether certificate requests bind at this margin.

kill criterion: - Placebo-anniversary kill: if the within-cohort placebo contrast δ_{plac} in the pooled disclosure cohorts is significantly positive at the two-sided $\alpha = 0.01$ screen AND its magnitude is $\geq 50\%$ of δ_{main} , the design cannot separate certificate clearing from generic anniversary dynamics: H1 is declared uninterpretable (design failure), no causal claim is made at Stage 2, and the paper reports the falsification transparently. (Gate failure without a significantly positive placebo — e.g., $|\delta_{\text{plac}}| \geq 0.5 * \delta_{\text{main}}$ with $|z_{\text{plac}}| < 2.576$ — renders H1 not supported rather than a design failure.)

- Arm-T never-disclosed kill (retained from the demoted H3 with full force, evaluated placebo-first under the estimation-order lock): if arm T shows a significantly positive jump at its pseudo-clearing date (two-sided $\alpha = 0.05$) with magnitude $\geq 50\%$ of arm F’s jump, the causal interpretation of H1 is withdrawn and all estimates are reported as descriptive anniversary dynamics common to disclosed and undisclosed offences; pre-committed as fatal for the causal ceiling. This is a disconfirmation gate whose false-firing probability under a true-null arm T is alpha-bounded (simulated 0.0242); its DETECTION is power-dependent and is quantified in the deposited script rather than assumed: it fires with probability 0.372 at a true arm-T jump equal to 50% of arm F’s and 0.950 at 100% ($\text{power.gate_detection}$), so a near-threshold violation is missed with substantial probability — a residual bounded ex post by the arm-T TOST band and acknowledged as a limitation.
- If any Stage-B outcome-neutral check fails and cannot be reconciled in writing (coverage deviation $> 5\%$, CPR linkage $< 95\%$, hazard outside 1-15%, clearing-month density $> 2x$ uniform unresolved by the legal-coding audit), confirmatory analysis does not begin; the failure and its diagnosis are reported instead.

Source-preserved H0 frozen statement

id: H0

statement initial: Substantive null: criminal records chiefly proxy persistent characteristics of the people who carry them rather than causing exclusion at this margin — the monthly job-finding hazard of non-employed single-conviction individuals evolves smoothly through the scheduled certificate-clearing month, with no discontinuity distinguishable from duration dependence and desistance. Under this pattern the upper bound of the 95% CI on δ_{main} is reported as the largest hazard increase compatible with the data, and effects above that bound are ruled out (null bounded, never accepted). ## Ordered estimands and post-estimation claim policy

Source locators additionally: `prereg.yaml` `analysis_plan`, `interpretations[H1]`, timeline C/D; execution plan T4/T10/F1-F3. After the complete T archive (any T sign), compute pooled H1 and its within-cohort δ_{plac} , and arm-specific F/S/C coefficients and δ_{F} needed for the arm-T comparison. The arm-specific F estimate here is not a second confirmatory test. Preserve all estimates before adjudicating any gate. All of H1 and its placebo use the exact same source model and registered sample scope; no subgroup chosen by outcome.

Define $K_{\text{T}} = \delta_{\text{T}} > 0 \text{ AND } p_{\text{T}} < 0.05 \text{ AND } \delta_{\text{T}} \geq 0.5\delta_{\text{F}}$, *using the original unmatched T*; define $K_{\text{P}} = \delta_{\text{plac}} > 0 \text{ AND two-sided } p_{\text{plac}} < 0.01 \text{ AND } \text{abs}(\delta_{\text{plac}}) \geq 0.5\delta_{\text{main}}$. Define $G01 = \text{abs}(z_{\text{plac}}) < 2.576 \text{ AND } \text{abs}(\delta_{\text{plac}}) < 0.5\delta_{\text{main}}$; G05 substitutes 1.96. Use the source's strict support inequalities and inclusive magnitude kill inequality. p exactly 0.05/0.01 is not significant; equality at a screen threshold fails that support screen. The literal rounded screen and p -value significance may differ at the last decimal: compute and retain both; kill rules take precedence. Do not insert $\text{abs}(\delta_{\text{F}})$, positive denominator floors, continuity corrections or an invented equivalence margin. With nonpositive main/F estimates the source's signed comparison still applies; report this rather than silently repair it. A missing comparator yields unresolved claim adjudication, not a kill pass.

The non-significance of a main estimate never stops reporting. H0 uses the H1 95% upper bound as largest compatible increase; relative effect reporting requires the observed source baseline and is unavailable if undefined. A bound is scoped to the model and assumptions and cannot itself establish persistent traits as the cause. Both kill gates constrain claims only; all exploratory analyses remain due under their own feasibility gates.

Mandatory routine and conditional analyses (same scientific unit)

1. Always publish the identical $\alpha=0.05$ placebo-screen pass/fail and implied verdict next to G01 (A2). Log both reasons, not just the selected conclusion.
2. Test mean hazard[-3:-1] below mean hazard[-6:-4], two-sided $\alpha .05$. If significantly lower, preserve primary and add donut $\text{mean}[+1:+6] - \text{mean}[-6:-3]$ to the main table; state worker-side retiming contributes. Source does not state whether the trigger uses raw or adjusted hazards; U11 must be settled from source authority before it can be executed. Do not choose the version with a favorable result.

3. Run the source person-FE variant (add person FE; otherwise same contrast). Collinearity/nonidentification is an explicit component failure, never a substitute model.
4. After both preperiod [-24:-7] hazards exist, if T vs F differs by more than factor 2 in either direction, add T exactly matched to F on KOEN x five-year age band x decision year; keep original kill/H3a unchanged. Exact matching/subsampling weights and zero-baseline handling are unfinished (U11). Report comparator mismatch even if matched version cannot run.
5. If late-cohort coverage ends before +18, retain unbalanced primary bins and add composition-constant cohorts fully observable [-24:+12]; do not replace the required 12 pre/6 post minimum.
6. If >5% of clock-origin dates within a cohort year heap on one date, exclude those decisions in the source sensitivity. If main changes sign or loses significance, foreground this sensitivity while retaining primary.
7. If boundary KOEN/five-year-age standardized differences violate the source <.10 rule, report composition-reweighted robustness beside primary. Equality .10 has no source-specified trigger convention; keep it unresolved rather than choosing one. Weight construction is unfinished (U11).
8. Re-estimate including post-reconviction months with statutorily reset clocks. If $\text{abs}(\text{delta_reset} - \text{delta_main}) > \text{SE_main}$, report both in main text and scope to the reconviction-free population. Historical reset treatment is U01/U11; do not invent the legal reset formula. Scope and caution are retained even though the source's censoring assumptions are not proven.
9. Preserve source exploratory heterogeneity by KOEN and age band; the exact interaction/subgroup specifications and multiplicity mapping are unfinished (U09/U11). No new age categories, estimators or correction are supplied.

These are internal staged obligations, not new Atoms. H1 main estimation and archive occur first, followed by its routine variants when their inputs are available. Source locks T battery -> H1 -> schedule -> mechanism target estimation; it does not fix the relative order of every Stage-D sensitivity. The graph adopts a conservative compatible schedule: finish this H1 module's registered sensitivities (or documented component unavailability) before activating schedule targets. Source Stage-D labels remain visible. No sensitivity chooses whether the original H1 estimate is shown.

Outputs: atom-000003/event-coefficients.csv (pooled/F/S/C, event_month, estimate/lower/upper probability units, status, reason; F1/F2); hazard-levels.csv (F/S/C raw binned hazard fractions, F3); h1-contrasts.csv (T4, main/placebo/F/S/C and triggered donut, scope, estimate, se, lower/upper, p_raw, persons, risk_person_months); claim-gates.csv (K_T,K_P,G01,G05, measured inputs, exact reason, registered/sensitivity verdict); robustness.csv (T10, variant, trigger inputs, required flag, estimate, se, 95% CI, sign/significance change, divergence flag, status, reason); heterogeneity.csv (pending exact source specifications). Copy the T estimate by reference, not re-estimation. Every variant has a separate status; missing optional sensitivity does not erase the main result, but prose discloses incomplete corroboration.

Source planning simulations only (not rerun here): placebo kill detection 0.472 at a true placebo jump of half the floor; arm-T kill detection 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire 0.0017 / 0.0242. These rates are not achieved empirical power or proof of validity. ## Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace $> 75\%$ for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```
id: atom-000003
topic: Clearing and job finding
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
concepts: []
literature: []
bonds: []
preregistration:
  version: 1
  mode: adaptive
  question: Does reaching the scheduled private-certificate clearing date
    change the monthly employee-job-finding hazard?
  rationale: H1, its within-cohort placebo, both post-estimation kill
    ↳ comparisons,
      raw descriptive profiles and routine sensitivity variants jointly answer
      one confirmatory question. H0 is an interpretation of H1's interval, not
      another experiment. Arm-specific estimates required to adjudicate H1 stay
      here and are reused by schedule analysis.
  assumption: The source assumptions and unresolved choices in
    ↳ prereg/identification.md
      and prereg/data-contract.md are maintained, not empirically validated
      by this conversion.
  target_strength: causal
  target_shape: temporal
  ratings:
    importance: 3
    novelty: 1
    feasibility: 1
    data_advantage: 3
    informativeness: 0.0
  tables:
    - KRAF
    - KRIN
    - BFL
    - BEF
```

```

- CPST
- VNDS_UD
activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) ==
"scope_fs") AND (state(atom-000002) == "archived_positive" OR
↪ state(atom-000002)
== "archived_other")
verdicts:
- key: both_kills
region: 'Complete main and comparator contrasts: both K_T and K_P defined
below are true; first-match precedence.'
says: Both falsifications fire. Report all estimates with
↪ descriptive/associational
ceiling.
- key: traffic_kill
region: K_T is true and previous region does not apply.
says: Withdraw causal interpretation; report the positive, negative or
nonsignificant main result and placebo evidence.
- key: anniversary_kill
region: K_P is true and previous regions do not apply.
says: Design failed its within-cohort falsification; retain all estimates
and withdraw causal interpretation.
- key: negative
region: Both kills evaluated false; delta_main<0 and two-sided
↪ p_main<0.05.
says: Contrary to H1; negative effect disconfirms the predicted increase
and is never relabeled supportive.
- key: supported_sensitive
region: Both kills false; delta_main>0, p_main<0.05, registered A2 gate
G01 true, but G05 false.
says: Source H1 support under A2 depends on the screen amendment. Report
mandatory original-screen contrary disposition beside it; retain claim
caveats.
- key: supported_stable
region: Both kills false; delta_main>0, p_main<0.05, G01 and G05 true.
says: H1 is supported under both screens, within maintained assumptions
and the narrow source claim ceiling.
- key: bounded
region: Both kills false and p_main>=0.05 (either sign, including zero).
says: Report the 95% upper CI bound; no evidence of the predicted
↪ increase,
no accepted null or proof of persistent-trait causation.
- key: not_supported
region: Both kills false; positive p_main<0.05 but G01 is false.
says: H1 is not supported. Gate failure without a positive-significant
magnitude violation is not automatically design failure.
- key: otherwise
region: otherwise
says: Main/comparator evidence or a necessary claim adjudication is
↪ unresolved;
report estimates available, no causal support.
protocol: |2

## Shared execution contract (incorporated by reference)

```

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit
 ↪ aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL
 ↪ conversion on 2026-09-05, not replication of a published empirical
 ↪ paper. Source target labels below are traceability only; this Atom ID
 ↪ owns identity, activation, protocol and local states. No independent
 ↪ reviewer has accepted the conversion. prereg/data-contract.md fixes
 ↪ the shared cohort, fields, joins, all seven Stage-B checks and unreso
 ↪ lved pre-data gates; prereg/identification.md fixes the maintained
 ↪ assumptions, estimator and inferential ceiling; prereg/governance.md
 ↪ fixes multiplicity, disclosure and failure reporting. Read these with
 ↪ this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing
 ↪ source specification is an unresolved pre-data gate, not an observed
 ↪ data gap, statistical null, or permission to use a default. A
 ↪ documented empirical boundary can receive a local boundary state only
 ↪ after a permitted check actually establishes it. An attempted
 ↪ operation that produces no scientifically adjudicable evidence has
 ↪ terminal no_result; not_activated records its activation trace.
 ↪ Neither counts as done. Subcomponents that remain unestimable retain
 ↪ their own exact reason and all available components remain reported.
 ↪ Never convert missing or disclosure-withheld numbers into zero. An
 ↪ unavailable optional component cannot erase independently
 ↪ interpretable estimates; where the source explicitly makes its
 ↪ completion a prerequisite (Stage-0/Stage-B clearance; arm-T
 ↪ archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed
 ↪ execution artifact directory, never a claimed runtime mount. They are
 ↪ not created in this pre-data World. Each output row carries target,
 ↪ component, status, reason, inferential_tier, unit, sample_scope, and
 ↪ source_locator; available estimates carry estimate, se, lower, upper,
 ↪ p_raw, p_adjusted where defined, persons and risk_person_months where
 ↪ applicable. Include one row for each required unavailable target.
 ↪ Local states are evaluated first-match in listed order; component
 ↪ results and all claim restrictions remain visible even when one state
 ↪ takes precedence. The final otherwise catch-all means unresolved
 ↪ evidence, never support or equivalence. Graph keys do not overwrite
 ↪ source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18} \beta_k \cdot 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-}$
 $\hookrightarrow$ spell-duration FE (1-36 individual months, 37+ pooled) + arm FE in
 $\hookrightarrow$ pooled F+S+C (or source-contingent F+S) only. Use $R \geq 4.3$,
 $\hookrightarrow$ `fixest::feols` ≥ 0.11 , OLS LPM, person-cluster CR1 covariance; primary
 $\hookrightarrow$ has no person FE and no other covariates. The deposited Stata `reghdfe`
 $\hookrightarrow$ fallback is only promised; its complete identical specification must
 $\hookrightarrow$ be frozen before execution. No new software versions or physical
 $\hookrightarrow$ paths are inferred. For any contrast, retain the omitted -1
 $\hookrightarrow$ coefficient as the defined reference zero and form its registered
 $\hookrightarrow$ equal-bin linear combination and covariance, not raw pooled-window
 $\hookrightarrow$ hazard means. The simulation's ratio-of-totals calculation is not a
 $\hookrightarrow$ replacement estimator. $\text{delta} = \text{mean}(\beta_{0:5}) - \text{mean}(\beta_{-6:-1})$;
 $\hookrightarrow$ $\text{delta_plac} = \text{mean}(\beta_{-12:-7}) - \text{mean}(\beta_{-18:-13})$. Estimate SE =
 $\hookrightarrow$ $\sqrt{c' V_{CR1} c}$ and the registered two-sided Wald p and 95% CI.
 $\hookrightarrow$ Missing/unidentified bins needed for a contrast are a nonestimability
 $\hookrightarrow$ boundary; do not average only available bins. Raw binned hazards are
 $\hookrightarrow$ separate descriptive outputs. Exact source-silent implementation
 $\hookrightarrow$ choices remain in the pre-data gate ledger.

Source-preserved H1 frozen statement, target and forecast

****id**:** H1

****tier**:** confirmatory

****statement initial**:** Compared to the months immediately before a
 $\hookrightarrow$ conviction's statutory certificate-clearing date, non-employed
 $\hookrightarrow$ single-conviction individuals will show a higher monthly job-finding
 $\hookrightarrow$ hazard (BFL job starts via `AJO_JOB_START_DAT0`) in the months
 $\hookrightarrow$ immediately after, while showing no comparable jump at placebo
 $\hookrightarrow$ anniversaries of the same conviction (e.g., twelve months before the
 $\hookrightarrow$ scheduled clearing date).

****direction**:** positive

****comparator**:** The same pooled disclosure cohorts' non-employed
 $\hookrightarrow$ person-months in event months -6..-1 immediately before the scheduled
 $\hookrightarrow$ clearing month (within-cohort event time); placebo contrast compares
 $\hookrightarrow$ months -12..-7 against -18..-13 of the same cohorts.

****exposure variable**:** Scheduled private-certificate clearing month:
 $\hookrightarrow$ final-instance decision date (`AFG_AFGOEDT0` with the `AFG_ANKEDT0`
 $\hookrightarrow$ appeal rule) + 24 months (arm F) or + 36 months (arm S); `IND_LOESLDT0`
 $\hookrightarrow$ + 60 months (arm C), per the Stage-0 legal-vintage memo.

****outcome variable**:** Monthly job-finding hazard: any BFL job start
 $\hookrightarrow$ (`AJO_JOB_START_DAT0`) in month m, conditional on non-employment at the
 $\hookrightarrow$ first day of month m (no BFL compressed job covering the first of the
 $\hookrightarrow$ month).

****estimand**:** Among non-employed single-conviction individuals in the
 → pooled disclosure cohorts (arm F: Criminal Code plus frozen drugs-offence fines; arm S: fully suspended sentences; arm C: unconditional
 → custodial sentences), each person-month panel centered on that
 → conviction's scheduled private-certificate clearing month, the change
 → in the monthly job-finding hazard at the scheduled clearing month,
 → holding calendar time and non-employment-spell duration fixed;
 → jointly, the absence of any comparable change at the within-cohort
 → placebo anniversary 12 months before the scheduled clearing month.

****primary quantity**:** $\Delta_{\text{main}} = \text{mean}(\beta_k, k \text{ in } 0..+5) -$
 → $\text{mean}(\beta_k, k \text{ in } -6..-1)$ from the event-time-bin coefficients of the
 → stacked discrete-time hazard LPM; placebo contrast $\Delta_{\text{plac}} =$
 → $\text{mean}(\beta_k, k \text{ in } -12..-7) - \text{mean}(\beta_k, k \text{ in } -18..-13)$. H1 is
 → supported iff (i) $\Delta_{\text{main}} > 0$ with a two-sided Wald test at α
 → = 0.05 (person-clustered SEs; a significant negative estimate is disconfirming) AND (ii) the placebo-anniversary equivalence gate passes:
 → Δ_{plac} not significant at two-sided $\alpha = 0.01$ ($|z_{\text{plac}}| <$
 → 2.576) and $|\Delta_{\text{plac}}| < 0.5 * \Delta_{\text{main}}$. The $\alpha=0.01$ screen is
 → registration-stage Amendment A2 (the original $\alpha=0.05$ screen was
 → structurally capped at 0.9492; the trade-off is stated in full under
 → amendments, and the $\alpha=0.05$ -screen gate is a mandatory Stage-2
 → sensitivity). Simulated power at the frozen floor effect: Wald
 → component 1.0000; full support rule with the $\alpha=0.01$ screen 0.9883.

****forecast**:** ****point**:** $\Delta_{\text{main}} = +0.35$ percentage points (an 8.8%
 → relative rise on the assumed 4.0 pp baseline monthly hazard)

****interval 90**:** $[-0.05, +1.00]$ percentage points

****basis**:** Agent judgment anchored on: (i) the design's frozen floor
 → effect (+0.30 pp, 7.5% relative), deliberately set below the smallest
 → published expungement estimates; (ii) Prescott & Starr (2019), whose
 → Michigan set-aside gains are an order of magnitude larger but heavily
 → selected; (iii) Agan, Garin, Koustas, Mas & Yang (2024), whose
 → near-null US remediation effects are attributed partly to
 → non-salience - Denmark's mechanical certificate purge plus routine
 → (but not universal) employer requests and an ex-ante-known date
 → should sit between these poles, closer to the floor; (iv) attenuation
 → risks from stale certificates and monthly smearing. The 10% left tail
 → below zero reflects genuine uncertainty about whether certificate
 → requests bind at this margin.

****kill criterion**:** - Placebo-anniversary kill: if the within-cohort
 → placebo contrast Δ_{plac} in the pooled disclosure cohorts is
 → significantly positive at the two-sided $\alpha = 0.01$ screen AND its
 → magnitude is $\geq 50\%$ of Δ_{main} , the design cannot separate
 → certificate clearing from generic anniversary dynamics: H1 is
 → declared uninterpretable (design failure), no causal claim is made at
 → Stage 2, and the paper reports the falsification transparently. (Gate
 → failure without a significantly positive placebo - e.g., $|\Delta_{\text{plac}}|$
 → $\geq 0.5 * \Delta_{\text{main}}$ with $|z_{\text{plac}}| < 2.576$ - renders H1 not supported
 → rather than a design failure.)

- Arm-T never-disclosed kill (retained from the demoted H3 with full force, evaluated placebo-first under the estimation-order lock): if arm T shows a significantly positive jump at its pseudo-clearing date (two-sided $\alpha = 0.05$) with magnitude $\geq 50\%$ of arm F's jump, the causal interpretation of H1 is withdrawn and all estimates are reported as descriptive anniversary dynamics common to disclosed and undisclosed offences; pre-committed as fatal for the causal ceiling. This is a disconfirmation gate whose false-firing probability under a true-null arm T is alpha-bounded (simulated 0.0242); its DETECTION is power-dependent and is quantified in the deposited script rather than assumed: it fires with probability 0.372 at a true arm-T jump equal to 50% of arm F's and 0.950 at 100% (power.gate_detection), so a near-threshold violation is missed with substantial probability - a residual bounded ex post by the arm-T TOST band and acknowledged as a limitation.
- If any Stage-B outcome-neutral check fails and cannot be reconciled in writing (coverage deviation $> 5\%$, CPR linkage $< 95\%$, hazard outside 1-15%, clearing-month density $> 2x$ uniform unresolved by the legal-coding audit), confirmatory analysis does not begin; the failure and its diagnosis are reported instead.

Source-preserved H0 frozen statement

****id**:** H0

****statement initial**:** Substantive null: criminal records chiefly proxy persistent characteristics of the people who carry them rather than causing exclusion at this margin - the monthly job-finding hazard of non-employed single-conviction individuals evolves smoothly through the scheduled certificate-clearing month, with no discontinuity distinguishable from duration dependence and desistance. Under this pattern the upper bound of the 95% CI on delta_main is reported as the largest hazard increase compatible with the data, and effects above that bound are ruled out (null bounded, never accepted).

Ordered estimands and post-estimation claim policy

Source locators additionally: prereg.yaml analysis_plan, interpretations[H1], timeline C/D; execution plan T4/T10/F1-F3. After the complete T archive (any T sign), compute pooled H1 and its within-cohort delta_plac, and arm-specific F/S/C coefficients and delta_F needed for the arm-T comparison. The arm-specific F estimate here is not a second confirmatory test. Preserve all estimates before adjudicating any gate. All of H1 and its placebo use the exact same source model and registered sample scope; no subgroup chosen by outcome.

Define $K_T = \text{delta}_T > 0 \text{ AND } p_T < 0.05 \text{ AND } \text{delta}_T \geq 0.5 * \text{delta}_F$, using the original unmatched T; define $K_P = \text{delta}_{\text{plac}} > 0 \text{ AND two-sided } p_{\text{plac}} < 0.01 \text{ AND } \text{abs}(\text{delta}_{\text{plac}}) \geq 0.5 * \text{delta}_{\text{main}}$. Define $G01 = \text{abs}(z_{\text{plac}}) < 2.576 \text{ AND } \text{abs}(\text{delta}_{\text{plac}}) < 0.5 * \text{delta}_{\text{main}}$; $G05$ substitutes 1.96. Use the source's strict support inequalities and inclusive magnitude kill inequality. p exactly 0.05/0.01 is not significant; equality at a screen threshold fails that support screen. The literal rounded screen and p -value significance may differ at the last decimal: compute and retain both; kill rules take precedence. Do not insert $\text{abs}(\text{delta}_F)$, positive denominator floors, continuity corrections or an invented equivalence margin. With nonpositive main/F estimates the source's signed comparison still applies; report this rather than silently repair it. A missing comparator yields unresolved claim adjudication, not a kill pass.

The non-significance of a main estimate never stops reporting. H0 uses
 → the H1 95% upper bound as largest compatible increase; relative
 → effect reporting requires the observed source baseline and is
 → unavailable if undefined. A bound is scoped to the model and
 → assumptions and cannot itself establish persistent traits as the
 → cause. Both kill gates constrain claims only; all exploratory
 → analyses remain due under their own feasibility gates.

Mandatory routine and conditional analyses (same scientific unit)

1. Always publish the identical alpha-0.05 placebo-screen pass/fail and
 → implied verdict next to G01 (A2). Log both reasons, not just the
 → selected conclusion.
2. Test mean hazard[-3:-1] below mean hazard[-6:-4], two-sided alpha .05.
 → If significantly lower, preserve primary and add donut
 → mean[+1:+6]-mean[-6:-3] to the main table; state worker-side retiming
 → contributes. Source does not state whether the trigger uses raw or
 → adjusted hazards; U11 must be settled from source authority before it
 → can be executed. Do not choose the version with a favorable result.
3. Run the source person-FE variant (add person FE; otherwise same
 → contrast). Collinearity/nonidentification is an explicit component
 → failure, never a substitute model.
4. After both preperiod [-24:-7] hazards exist, if T vs F differs by more
 → than factor 2 in either direction, add T exactly matched to F on KOEN
 → x five-year age band x decision year; keep original kill/H3a
 → unchanged. Exact matching/subsampling weights and zero-baseline
 → handling are unfinished (U11). Report comparator mismatch even if
 → matched version cannot run.
5. If late-cohort coverage ends before +18, retain unbalanced primary
 → bins and add composition-constant cohorts fully observable [-24:+12];
 → do not replace the required 12 pre/6 post minimum.
6. If >5% of clock-origin dates within a cohort year heap on one date,
 → exclude those decisions in the source sensitivity. If main changes
 → sign or loses significance, foreground this sensitivity while
 → retaining primary.
7. If boundary KOEN/five-year-age standardized differences violate the
 → source <.10 rule, report composition-reweighted robustness beside
 → primary. Equality .10 has no source-specified trigger convention;
 → keep it unresolved rather than choosing one. Weight construction is
 → unfinished (U11).
8. Re-estimate including post-reconviction months with statutorily reset
 → clocks. If $\text{abs}(\text{delta_reset} - \text{delta_main}) > \text{SE_main}$, report both in main
 → text and scope to the reconviction-free population. Historical reset
 → treatment is U01/U11; do not invent the legal reset formula. Scope
 → and caution are retained even though the source's censoring
 → assumptions are not proven.
9. Preserve source exploratory heterogeneity by KOEN and age band; the
 → exact interaction/subgroup specifications and multiplicity mapping
 → are unfinished (U09/U11). No new age categories, estimators or
 → correction are supplied.

These are internal staged obligations, not new Atoms. H1 main estimation
 → and archive occur first, followed by its routine variants when their
 → inputs are available. Source locks T battery → H1 → schedule →
 → mechanism target estimation; it does not fix the relative order of
 → every Stage-D sensitivity. The graph adopts a conservative compatible
 → schedule: finish this H1 module's registered sensitivities (or
 → documented component unavailability) before activating schedule
 → targets. Source Stage-D labels remain visible. No sensitivity chooses
 → whether the original H1 estimate is shown.

```

Outputs: atom-000003/event-coefficients.csv (pooled/F/S/C, event_month,
↳ estimate/lower/upper probability units, status, reason; F1/F2);
↳ hazard-levels.csv (F/S/C raw binned hazard fractions, F3); h1-contras
↳ ts.csv (T4, main/placebo/F/S/C and triggered donut, scope, estimate,
↳ se, lower/upper, p_raw, persons, risk_person_months); claim-gates.csv
↳ (K_T,K_P,G01,G05, measured inputs, exact reason, registered/sensitivi
↳ ty verdict); robustness.csv (T10, variant, trigger inputs, required
↳ flag, estimate, se, 95% CI, sign/significance change, divergence
↳ flag, status, reason); heterogeneity.csv (pending exact source specif
↳ ications). Copy the T estimate by reference, not re-estimation. Every
↳ variant has a separate status; missing optional sensitivity does not
↳ erase the main result, but prose discloses incomplete corroboration.

```

```

Source planning simulations only (not rerun here): placebo kill detection
↳ 0.472 at a true placebo jump of half the floor; arm-T kill detection
↳ 0.372 / 0.950 at true jumps of 50% / 100% of F; true-null false-fire
↳ 0.0017 / 0.0242. These rates are not achieved empirical power or
↳ proof of validity.
## Reproducibility and disclosure

```

```

Future governed execution records input metadata/vintages, transformation
↳ s, row-count reconciliation, software and seed (execution plan
↳ specifies 20260818), estimator/contrast definitions, exclusions,
↳ activation traces, component statuses and archive timestamps. All
↳ rows remain inside the governed environment. Only cleared aggregate
↳ outputs feed figures; source thresholds are >=5 persons, additionally
↳ >=3 workplaces and no workplace >75% for workplace/industry
↳ tabulations. No invented disclosure aggregation algorithm: the source
↳ promises collapse to other/adjacent-bin presentation, but exact
↳ collapse precedence remains a pre-data gate where consequential. No
↳ microdata, model fits, simulations, or newly observed estimates are
↳ produced in this conversion. Synthetic plotting-interface checks are
↳ permitted outside the World and must never populate manuscript slots.

```

Does reaching the scheduled private-certificate clearing date change the monthly employee-job-finding hazard?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See [prereg/replication/conversion-audit.md](#).

Reference implementation

Entry point and supported/unresolved components for atom-000003: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.

atom-000004: Disclosure schedule migration

Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. prereg/data-contract.md fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; prereg/identification.md fixes the maintained assumptions, estimator and inferential ceiling; prereg/governance.md fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal no_result; not_activated records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18, k \neq -1} \beta_k 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in pooled F+S+C (or source-contingent F+S) only}$. Use $R \geq 4.3$, `fixest::feols` ≥ 0.11 , OLS LPM, person-cluster CR1 covariance; primary has no person FE and no other covariates. The deposited Stata `reghdfe` fallback is only promised; its complete identical specification must be frozen before execution. No new software versions or physical paths are inferred. For any contrast, retain the omitted -1 coefficient as the defined reference zero and

form its registered equal-bin linear combination and covariance, not raw pooled-window hazard means. The simulation’s ratio-of-totals calculation is not a replacement estimator. $\text{delta} = \text{mean}(\text{beta}[0:5]) - \text{mean}(\text{beta}[-6:-1])$; $\text{delta_plac} = \text{mean}(\text{beta}[-12:-7]) - \text{mean}(\text{beta}[-18:-13])$. Estimate $\text{SE} = \sqrt{c' V_{\text{CR1}} c}$ and the registered two-sided Wald p and 95% CI. Missing/unidentified bins needed for a contrast are a nonestimability boundary; do not average only available bins. Raw binned hazards are separate descriptive outputs. Exact source-silent implementation choices remain in the pre-data gate ledger.

Source-preserved H3 frozen statement and forecast

id: H3

tier: exploratory

statement initial: Compared to persons fined for Criminal Code offences (clearing two years after AFG_AFGOEDTO), persons with suspended sentences (three years) and unsuspended custodial sentences (five years after IND_LOESLDTO) will show their hiring-hazard jump at correspondingly later scheduled dates, while persons with Road Traffic Act fines — offences that never enter the private certificate (identified via AFG_GER7) — will show no jump at the matched pseudo-clearing date.

direction: positive

comparator: H3a: arm-T Road Traffic Act fine decisions at the identical 24-month pseudo-clearing horizon (never disclosed); H3b: the suspended-sentence arm’s own contrast at the 24-month non-clearing horizon.

exposure variable: Sanction-specific statutory clearing horizon (24/36/60 months on decision vs release anchors), encoded from AFG_AFGTYP3, AFG_GER7, final-instance decision date, and IND_LOESLDTO.

outcome variable: Monthly job-finding hazard (any BFL job start, AJO_JOB_START_DATO, conditional on non-employment at month start), arm by arm in event time.

estimand: Schedule-tracking of the discontinuity: (H3a) the difference-in-discontinuities at 24 months after the final-instance decision between arm-F convictions (which clear then) and arm-T Road Traffic Act fine decisions (never entered on the private certificate), $\text{delta_F}(24\text{m}) - \text{delta_T}(24\text{m})$; (H3b) within the suspended-sentence cohort, $\text{delta_S}(36\text{m}) - \text{delta_S}(24\text{m})$, the contrast at its own clearing date minus the same-length contrast at the 24-month non-clearing horizon.

primary quantity: $\text{delta_F}(24\text{m}) - \text{delta_T}(24\text{m}) > 0$ and $\text{delta_S}(36\text{m}) - \text{delta_S}(24\text{m}) > 0$, each Wald-tested with Holm across the exploratory schedule family {H3a, H3b, H3c, E7} under the Exploratory analyses heading. Point estimates and 95% CIs are reported regardless of significance; nulls are explicitly labeled uninformative at the achieved power (0.28-0.66 at the floor effect) rather than evidence against migration. Separately and NON-exploratorily, the arm-T battery feeds the pre-registered kill gate on H1’s causal interpretation and the TOST equivalence band.

forecast point: H3a: $\text{delta_F}(24\text{m}) - \text{delta_T}(24\text{m}) = +0.30$ pp; H3b: $\text{delta_S}(36\text{m}) - \text{delta_S}(24\text{m}) = +0.25$ pp

interval 90: H3a: $[-0.10, +0.85]$ pp; H3b: $[-0.20, +0.75]$ pp

basis: Agent judgment (exploratory forecast): conditional on my H1 forecast, a valid arm-T placebo implies H3a approximately equals arm F's own jump; H3b is centered slightly lower because any 24-month anniversary institutions common to all decision cohorts would subtract from the 36m-vs-24m migration contrast. Wide intervals reflect the simulated power of 0.28-0.66 at the floor effect — these estimates are expected to be noisy.

kill criterion: - Custodial demotion gates (executed and re-checked): H3c ran at Stage-A power $0.3308 < 0.95$, firing the pre-registered power gate — it is registered as exploratory; additionally, if custodial release linkage $< 90\%$ at Stage B, arm C is dropped from the confirmatory pooled H1 (re-registered on F+S per the contingent rule) and all custodial estimates are exploratory with the linkage rate disclosed.

- The arm-T component of this hypothesis retains kill-gate force on H1: a significantly positive arm-T pseudo-clearing jump $\geq 50\%$ of arm F's withdraws the causal interpretation of H1 (see H1 kill criteria).

Source-preserved H3c

id: H3c

tier: exploratory

estimand: The design's own pre-registered power gate fired (0.3308 at its gate alpha, far below 0.95). The H1-style contrast δ_C at IND_LOESLDTO + 60 months in the custodial arm, reported with 95% CI.

primary quantity: δ_C with person-clustered SE, Holm within the exploratory schedule family; reported alongside E7's decision-anchor placebo per the pre-committed interpretation pair.

Source-preserved E7

id: E7

tier: exploratory

estimand: Custodial anchor falsification: within arm C, the identical H1-style contrast at the pseudo-date final-instance decision + 60 months in addition to the registered IND_LOESLDTO + 60 months. Pre-committed reading: a jump at release+60m but not decision+60m is release-anchored schedule evidence; a jump at both is anniversary-suspect.

primary quantity: Paired contrasts $\delta_C(\text{release}+60\text{m})$ and $\delta_C(\text{decision}+60\text{m})$ with person-clustered SEs; Holm-corrected within the schedule family {H3a, H3b, H3c, E7} (presented alongside the audit analyses only); inherits H3c's low power and is reported with CIs, never as a confirmatory verdict. ## Execution and family coverage

Source locators: `prereg.yaml` `hypotheses[H3]`, `additional_exploratory_estimands[H3c,E7]`, `multiple_comparisons`, `interpretations`; execution plan 4.3, T6, F2. After H1 has been attempted in the locked order, irrespective of its support/kill state, compute $H3a = \delta_F(24) - \delta_T(24)$ using archived F and T estimates and the independent-arm variance sum. Compute $H3b = \delta_S(36) - \delta_S(24)$

using joint person covariance; source S(24) is the within-S anniversary contrast. H3c is $\Delta_C(\text{release}+60)$; E7 retains both $\Delta_C(\text{release}+60)$ and $\Delta_C(\text{decision}+60)$, with person-cluster covariance where a difference is required. No invented pooled contrast combines all three arms. C linkage <90% never removes the F/S contrasts; all C estimates are exploratory whether or not C contributed to H1.

Apply Holm in the declared schedule family {H3a,H3b,H3c,E7}, two-sided, predicted-positive directions. The source does not finish whether E7 is one anchor-difference test or two tests, how the repeated H3c release estimate is counted, or how unavailable members enter correction. U09 blocks those family decisions until source-author clarification before outcomes; it does not authorize a new testing family or dropping unavailable targets. Retain raw estimates/CIs if possible and label unresolved adjusted decisions. H3a/H3b both positive and significant supplies exploratory corroboration only. Release jump with no decision jump is the source release-anchored reading; both jumping is anniversary-suspect; source-silent neither/opposite/mixed patterns remain explicit unresolved/contrary component reports, never a new causal mechanism. Non-significance does not demonstrate absence at either anchor.

Outputs: atom-000004/schedule-contrasts.csv (source T6; H3a,H3b,H3c,E7_release,E7_decision, any source-resolved E7 tested contrast; anchor, estimate/se/95% CI, p_raw, p_adjusted, family_decision_status, status, reason); anchor-reading.csv (the paired pattern with exact inference limitations); family-ledger.csv (one entry for every named family member and retained component, never silently reduced). F2's arm-specific coefficients are already owned by atoms 2/3, so this Atom does not fit them merely to redraw a panel. The source planning powers 0.2817 conjunction, 0.6625 H3a, 0.3083 H3b and 0.3308 H3c are labeled historical simulation assumptions, never achieved power in the sample.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace >75% for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```
id: atom-000004
topic: Disclosure schedule migration
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
```

```

concepts: []
literature: []
bonds: []
preregistration:
  version: 1
  mode: adaptive
  question: Do the source job-finding contrasts follow sanction-specific
    ↪ clearing
      horizons and custodial anchors?
  rationale: H3a/H3b form the source migration question and H3c/E7 jointly
    assess its custodial anchor. Related arm profiles are inputs, not separate
    experiments; independent F/S information is retained if C is unavailable.
  assumption: The source assumptions and unresolved choices in
    ↪ prereg/identification.md
      and prereg/data-contract.md are maintained, not empirically validated
      by this conversion.
  target_strength: associational
  target_shape: comparison
  ratings:
    importance: 3
    novelty: 1
    feasibility: 1
    data_advantage: 3
    informativeness: 0.0
  tables:
    - KRAF
    - KRIN
    - BFL
    - BEF
    - CPST
    - VNDS_UD
  activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) ==
    "scope_fs") AND (state(atom-000002) == "archived_positive" OR
    ↪ state(atom-000002)
    == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) ==
    "no_result")
  verdicts:
    - key: partial
      region: At least one schedule component is scientifically reportable but
        some required component or multiplicity decision is
        ↪ unresolved/unavailable.
      says: Report every available contrast with component-specific directions
        and CIs; full migration adjudication is unresolved, not null.
    - key: mixed
      region: All components and family decisions available; at least one
        ↪ source-predicted
          contrast significantly positive and at least one significantly negative
          under the source family rule.
      says: Exploratory evidence is discordant; preserve each contrast, no
        ↪ pooled
          directional summary.
    - key: contrary
      region: All components/family decisions available; at least one contrast
        is significantly in the non-predicted direction and previous regions
        do not apply.
      says: Report exploratory disconfirmation for that component without
        ↪ upgrading
          or overturning H1.
    - key: corroborating
      region: All components/family decisions available; H3a and H3b positive

```

with Holm-adjusted $p < .05$, and no previous region applies.
says: Exploratory migration corroboration; explicitly report the H3c/E7 anchor pair, including anniversary-suspect patterns.

- key: uninformative
region: All components/family decisions available; H3a or H3b not
↳ significant;
no prior region applies.
says: Migration is uninformative at the source planning power; report CI bounds, not evidence against migration.
- key: otherwise
region: otherwise
says: No coherent schedule judgment is resolved; unavailable components are not zeros.

protocol: |2

Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit
↳ aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL
↳ conversion on 2026-09-05, not replication of a published empirical
↳ paper. Source target labels below are traceability only; this Atom ID
↳ owns identity, activation, protocol and local states. No independent
↳ reviewer has accepted the conversion. prereg/data-contract.md fixes
↳ the shared cohort, fields, joins, all seven Stage-B checks and unreso-
↳ lved pre-data gates; prereg/identification.md fixes the maintained
↳ assumptions, estimator and inferential ceiling; prereg/governance.md
↳ fixes multiplicity, disclosure and failure reporting. Read these with
↳ this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing
↳ source specification is an unresolved pre-data gate, not an observed
↳ data gap, statistical null, or permission to use a default. A
↳ documented empirical boundary can receive a local boundary state only
↳ after a permitted check actually establishes it. An attempted
↳ operation that produces no scientifically adjudicable evidence has
↳ terminal no_result; not_activated records its activation trace.
↳ Neither counts as done. Subcomponents that remain unestimable retain
↳ their own exact reason and all available components remain reported.
↳ Never convert missing or disclosure-withheld numbers into zero. An
↳ unavailable optional component cannot erase independently
↳ interpretable estimates; where the source explicitly makes its
↳ completion a prerequisite (Stage-0/Stage-B clearance; arm-T
↳ archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed
↳ execution artifact directory, never a claimed runtime mount. They are
↳ not created in this pre-data World. Each output row carries target,
↳ component, status, reason, inferential_tier, unit, sample_scope, and
↳ source_locator; available estimates carry estimate, se, lower, upper,
↳ p_raw, p_adjusted where defined, persons and risk_person_months where
↳ applicable. Include one row for each required unavailable target.
↳ Local states are evaluated first-match in listed order; component
↳ results and all claim restrictions remain visible even when one state
↳ takes precedence. The final otherwise catch-all means unresolved
↳ evidence, never support or equivalence. Graph keys do not overwrite
↳ source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18} \beta_k \cdot 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-}$
 $\rightarrow$ $\text{spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in}$
 $\rightarrow$ $\text{pooled F+S+C (or source-contingent F+S) only. Use } R \geq 4.3,$
 $\rightarrow$ $\text{fixest::feols } \geq 0.11, \text{ OLS LPM, person-cluster CR1 covariance; primary}$
 $\rightarrow$ $\text{has no person FE and no other covariates. The deposited Stata reghdfe}$
 $\rightarrow$ $\text{fallback is only promised; its complete identical specification must}$
 $\rightarrow$ $\text{be frozen before execution. No new software versions or physical}$
 $\rightarrow$ $\text{paths are inferred. For any contrast, retain the omitted -1}$
 $\rightarrow$ $\text{coefficient as the defined reference zero and form its registered}$
 $\rightarrow$ $\text{equal-bin linear combination and covariance, not raw pooled-window}$
 $\rightarrow$ $\text{hazard means. The simulation's ratio-of-totals calculation is not a}$
 $\rightarrow$ $\text{replacement estimator. } \Delta = \text{mean}(\beta_{0:5}) - \text{mean}(\beta_{-6:-1});$
 $\rightarrow$ $\Delta_{\text{plac}} = \text{mean}(\beta_{-12:-7}) - \text{mean}(\beta_{-18:-13}). \text{ Estimate SE =}$
 $\rightarrow$ $\text{sqrt(c' V_CR1 c) and the registered two-sided Wald p and 95\% CI.}$
 $\rightarrow$ $\text{Missing/unidentified bins needed for a contrast are a nonestimability}$
 $\rightarrow$ $\text{boundary; do not average only available bins. Raw binned hazards are}$
 $\rightarrow$ $\text{separate descriptive outputs. Exact source-silent implementation}$
 $\rightarrow$ $\text{choices remain in the pre-data gate ledger.}$

Source-preserved H3 frozen statement and forecast

****id**:** H3

****tier**:** exploratory

****statement initial**:** Compared to persons fined for Criminal Code offences (clearing two years after AFG_AFGOEDT0), persons with suspended sentences (three years) and unsuspended custodial sentences (five years after IND_LOESLDT0) will show their hiring-hazard jump at correspondingly later scheduled dates, while persons with Road Traffic Act fines - offences that never enter the private certificate (identified via AFG_GER7) - will show no jump at the matched pseudo-clearing date.

****direction**:** positive

****comparator**:** H3a: arm-T Road Traffic Act fine decisions at the identical 24-month pseudo-clearing horizon (never disclosed); H3b: the suspended-sentence arm's own contrast at the 24-month non-clearing horizon.

****exposure variable**:** Sanction-specific statutory clearing horizon (24/36/60 months on decision vs release anchors), encoded from AFG_AFGTYP3, AFG_GER7, final-instance decision date, and IND_LOESLDT0.

****outcome variable**:** Monthly job-finding hazard (any BFL job start, AJO_JOB_START_DAT0, conditional on non-employment at month start), arm by arm in event time.

****estimand**:** Schedule-tracking of the discontinuity: (H3a) the difference-in-discontinuities at 24 months after the final-instance decision between arm-F convictions (which clear then) and arm-T Road Traffic Act fine decisions (never entered on the private certificate), $\Delta_{\text{F}(24\text{m})} - \Delta_{\text{T}(24\text{m})}$; (H3b) within the suspended-sentence cohort, $\Delta_{\text{S}(36\text{m})} - \Delta_{\text{S}(24\text{m})}$, the contrast at its own clearing date minus the same-length contrast at the 24-month non-clearing horizon.

****primary quantity**:** $\Delta_F(24m) - \Delta_T(24m) > 0$ and $\Delta_S(36m) - \Delta_S(24m) > 0$, each Wald-tested with Holm across the exploratory schedule family {H3a, H3b, H3c, E7} under the Exploratory analyses heading. Point estimates and 95% CIs are reported regardless of significance; nulls are explicitly labeled uninformative at the achieved power (0.28-0.66 at the floor effect) rather than evidence against migration. Separately and NON-exploratorily, the arm-T battery feeds the pre-registered kill gate on H1's causal interpretation and the TOST equivalence band.

****forecast**:** ****point**:** H3a: $\Delta_F(24m) - \Delta_T(24m) = +0.30$ pp;
 ↪ H3b: $\Delta_S(36m) - \Delta_S(24m) = +0.25$ pp

****interval 90**:** H3a: [-0.10, +0.85] pp; H3b: [-0.20, +0.75] pp

****basis**:** Agent judgment (exploratory forecast): conditional on my H1 forecast, a valid arm-T placebo implies H3a approximately equals arm F's own jump; H3b is centered slightly lower because any 24-month anniversary institutions common to all decision cohorts would subtract from the 36m-vs-24m migration contrast. Wide intervals reflect the simulated power of 0.28-0.66 at the floor effect - these estimates are expected to be noisy.

****kill criterion**:** - Custodial demotion gates (executed and re-checked):
 ↪ H3c ran at Stage-A power $0.3308 < 0.95$, firing the pre-registered power gate - it is registered as exploratory; additionally, if custodial release linkage $< 90\%$ at Stage B, arm C is dropped from the confirmatory pooled H1 (re-registered on F+S per the contingent rule) and all custodial estimates are exploratory with the linkage rate disclosed.

- The arm-T component of this hypothesis retains kill-gate force on H1: a significantly positive arm-T pseudo-clearing jump $\geq 50\%$ of arm F's withdraws the causal interpretation of H1 (see H1 kill criteria).

Source-preserved H3c

****id**:** H3c

****tier**:** exploratory

****estimand**:** The design's own pre-registered power gate fired (0.3308 at its gate alpha, far below 0.95). The H1-style contrast Δ_C at IND_LOESLDT0 + 60 months in the custodial arm, reported with 95% CI.

****primary quantity**:** Δ_C with person-clustered SE, Holm within the exploratory schedule family; reported alongside E7's decision-anchor placebo per the pre-committed interpretation pair.

Source-preserved E7

****id**:** E7

****tier**:** exploratory

****estimand**:** Custodial anchor falsification: within arm C, the identical H1-style contrast at the pseudo-date final-instance decision + 60 months in addition to the registered IND_LOESLDT0 + 60 months. Pre-committed reading: a jump at release+60m but not decision+60m is release-anchored schedule evidence; a jump at both is anniversary-suspect.

```

**primary quantity**: Paired contrasts delta_C(release+60m) and
↳ delta_C(decision+60m) with person-clustered SEs; Holm-corrected
↳ within the schedule family {H3a, H3b, H3c, E7} (presented alongside
↳ the audit analyses only); inherits H3c's low power and is reported
↳ with CIs, never as a confirmatory verdict.
## Execution and family coverage

Source locators: prereg.yaml hypotheses[H3], additional_exploratory_estim
↳ ands[H3c,E7], multiple_comparisons, interpretations; execution plan
↳ 4.3, T6, F2. After H1 has been attempted in the locked order, irrespe
↳ ctive of its support/kill state, compute H3a=delta_F(24)-delta_T(24)
↳ using archived F and T estimates and the independent-arm variance
↳ sum. Compute H3b=delta_S(36)-delta_S(24) using joint person
↳ covariance; source S(24) is the within-S anniversary contrast. H3c is
↳ delta_C(release+60); E7 retains both delta_C(release+60) and
↳ delta_C(decision+60), with person-cluster covariance where a
↳ difference is required. No invented pooled contrast combines all
↳ three arms. C linkage <90% never removes the F/S contrasts; all C
↳ estimates are exploratory whether or not C contributed to H1.

Apply Holm in the declared schedule family {H3a,H3b,H3c,E7}, two-sided,
↳ predicted-positive directions. The source does not finish whether E7
↳ is one anchor-difference test or two tests, how the repeated H3c
↳ release estimate is counted, or how unavailable members enter
↳ correction. U09 blocks those family decisions until source-author
↳ clarification before outcomes; it does not authorize a new testing
↳ family or dropping unavailable targets. Retain raw estimates/CIs if
↳ possible and label unresolved adjusted decisions. H3a/H3b both
↳ positive and significant supplies exploratory corroboration only.
↳ Release jump with no decision jump is the source release-anchored
↳ reading; both jumping is anniversary-suspect; source-silent
↳ neither/opposite/mixed patterns remain explicit unresolved/contrary
↳ component reports, never a new causal mechanism. Non-significance
↳ does not demonstrate absence at either anchor.

Outputs: atom-000004/schedule-contrasts.csv (source T6;
↳ H3a,H3b,H3c,E7_release,E7_decision, any source-resolved E7 tested
↳ contrast; anchor, estimate/se/95% CI, p_raw, p_adjusted,
↳ family_decision_status, status, reason); anchor-reading.csv (the
↳ paired pattern with exact inference limitations); family-ledger.csv
↳ (one entry for every named family member and retained component,
↳ never silently reduced). F2's arm-specific coefficients are already
↳ owned by atoms 2/3, so this Atom does not fit them merely to redraw a
↳ panel. The source planning powers 0.2817 conjunction, 0.6625 H3a,
↳ 0.3083 H3b and 0.3308 H3c are labeled historical simulation
↳ assumptions, never achieved power in the sample.

## Reproducibility and disclosure

```

Future governed execution records input metadata/vintages, transformation,
 ↪ s, row-count reconciliation, software and seed (execution plan
 ↪ specifies 20260818), estimator/contrast definitions, exclusions,
 ↪ activation traces, component statuses and archive timestamps. All
 ↪ rows remain inside the governed environment. Only cleared aggregate
 ↪ outputs feed figures; source thresholds are ≥ 5 persons, additionally
 ↪ ≥ 3 workplaces and no workplace $> 75\%$ for workplace/industry
 ↪ tabulations. No invented disclosure aggregation algorithm: the source
 ↪ promises collapse to other/adjacent-bin presentation, but exact
 ↪ collapse precedence remains a pre-data gate where consequential. No
 ↪ microdata, model fits, simulations, or newly observed estimates are
 ↪ produced in this conversion. Synthetic plotting-interface checks are
 ↪ permitted outside the World and must never populate manuscript slots.

Do the source job-finding contrasts follow sanction-specific clearing horizons and custodial anchors?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See [prereg/replication/conversion-audit.md](#).

Reference implementation

Entry point and supported/unresolved components for atom-000004: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.

atom-000005: Industry screening signatures

Shared execution contract (incorporated by reference)

The scientific authority is source `prereg.yaml` v1.0, 2026-08-21, commit `aa65f6764ddf`, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. `prereg/data-contract.md` fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; `prereg/identification.md` fixes the maintained assumptions, estimator and inferential ceiling; `prereg/governance.md` fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal `no_result`; `not_activated` records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components

remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18} \beta_k 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in pooled F+S+C (or source-contingent F+S) only}$. Use $R \geq 4.3$, $\text{fixest::feols} \geq 0.11$, OLS LPM, person-cluster CR1 covariance; primary has no person FE and no other covariates. The deposited Stata reghdfe fallback is only promised; its complete identical specification must be frozen before execution. No new software versions or physical paths are inferred. For any contrast, retain the omitted -1 coefficient as the defined reference zero and form its registered equal-bin linear combination and covariance, not raw pooled-window hazard means. The simulation's ratio-of-totals calculation is not a replacement estimator. $\text{delta} = \text{mean}(\beta_{[0:5]}) - \text{mean}(\beta_{[-6:-1]})$; $\text{delta_plac} = \text{mean}(\beta_{[-12:-7]}) - \text{mean}(\beta_{[-18:-13]})$. Estimate $\text{SE} = \sqrt{c' V_{\text{CR1}} c}$ and the registered two-sided Wald p and 95% CI. Missing/unidentified bins needed for a contrast are a nonestimability boundary; do not average only available bins. Raw binned hazards are separate descriptive outputs. Exact source-silent implementation choices remain in the pre-data gate ledger.

Source-preserved H2 frozen statement and forecast

id: H2

tier: exploratory

statement initial: Compared to hires into industries with low certificate-screening intensity, the post-clearing increase in hiring will be larger for hires into certificate-intensive industries (childcare/education, finance and insurance, security and transport, public administration), classified pre-registration from AJO_BRANCHE07 using statutory certificate requirements.

direction: positive

comparator: Cause-specific hiring hazard into industries outside the frozen certificate-intensive DB07 list, in the same event window and risk set.

exposure variable: Scheduled private-certificate clearing month (as in H1), interacted with the frozen certificate-intensive DB07 classification of the started job (AJO_BRANCHE07): divisions 64-66 (finance and insurance), 80 (security and investigation), 84 (public administration), 85 (education), group 88.91 (child day-care), and class 49.32 (taxi operation).

outcome variable: Cause-specific monthly hiring hazard: probability of starting a BFL job in industry class c in month m , conditional on non-employment at the start of month m .

estimand: The difference between certificate-intensive and other industries in the proportional jump of the cause-specific monthly hiring hazard at the scheduled clearing month, with the industry list frozen at Stage 1 from statutory certificate/authorization requirements.

primary quantity: $\theta = (\text{delta_cert} / \text{hbar_cert_pre}) - (\text{delta_other} / \text{hbar_other_pre})$, where delta_c is the H1-style contrast for the cause-specific hazard of starting a job in industry class c and hbar_c_pre is that hazard's mean over event months $-6..-1$; person-cluster nonparametric bootstrap, 999 replications, percentile 95% CI; Holm-adjusted within the exploratory mechanism-signature family {H2, E4, E6}. Directional reading $\theta > 0$; a significantly negative θ is disconfirming for the employer-screening signature. Exploratory results cannot upgrade the confirmatory verdict.

forecast: point: $\theta = +0.10$

interval 90: $[-0.08, +0.35]$

basis: Agent judgment (exploratory forecast): the design's floor concentration is $\theta_{\text{true}} = 0.142$ (certificate-intensive hires +20% relative vs +5.8% elsewhere); my central estimate sits below that floor because division 84's public-certificate 10-year horizon dilutes the treated class (the E4 refinement tests exactly this) and missing-industry coding drags θ toward zero under the pre-registered dual-coding rule.

kill criterion: - Exploratory reporting gate: if observed hires into certificate-intensive industries across the event window number fewer than 1,000, or any cell required for θ falls below DST's minimum cell size, θ is not estimated; only the disclosure-compliant descriptive composition table is reported and no claim about the industry gradient is made.

Source-preserved E4

id: E4

tier: exploratory

estimand: Public-certificate located null: three-way refinement of the industry classification — (i) private-certificate statutory-screening private sectors, (ii) public-certificate sectors (DB07 division 84 and other authority-position sectors, where the public certificate's 10-year horizon means the employer-visible record does NOT expire at the private-certificate date; predicted attenuated/absent jump), (iii) low-screening sectors; predicted ordering of proportional jumps (i) $>$ (iii) $\geq$ (ii). Includes the pre-specified H2 robustness column excluding division 84 from the certificate-intensive group.

primary quantity: Cause-specific proportional-jump contrasts across the three frozen classes with person-cluster bootstrap CIs; ordering evaluated descriptively plus pairwise Wald tests, Holm within {H2, E4, E6}. ## Execution detail

Use source binary DB07 prefix list 64-66,80,84,85,88.91,49.32; transport in the frozen statement operationalizes taxi class 49.32, without adding other transport. Normalize punctuation only through an evidenced code-format crosswalk, not inferred code membership. Derive each cause-specific hiring indicator from the source highest-paid-hours start in that month; all other at-risk months are zero for that cause. Use the same source risk set and H1-style contrast. Compute hbar_c_pre as the source preperiod mean [-6:-1], then $\text{theta} = \text{delta_cert} / \text{hbar_cert_pre} - \text{delta_other} / \text{hbar_other_pre}$. No zero-denominator repair: source-silent treatment is U08. Person-cluster nonparametric bootstrap 999 replications, percentile 95% CI, seed 20260818 per plan. H2 requires the <1000/cell gate before estimating theta. No finite-effect substitution for suppressed or insufficient hires.

E4 uses three classes: private-certificate private screening sectors, public-certificate sectors including division 84 and other authority-position sectors, low-screening. Exact authority-position list is missing (U08). Predict proportional jumps private > low >= public; report descriptive ordering and source pairwise Wald tests with bootstrap CIs. Include H2 excluding division 84. Do not add the audit's proposed exclusion of 85/88.91; retain its child-certificate attenuation concern in interpretation. If industry missingness >5%, H2/E4 primary treats missing as non-certificate-intensive and additionally excludes missing in sensitivity; how missing maps into E4's three classes and the primary treatment at <=5% are unfinished source choices, not guessed here. The two variants and discrepancy are mandatory when triggered.

Mechanism family {H2,E4,E6} uses Holm, coordinated across this Atom and atom-000006; no within-Atom substitute family. H2 percentile CI and the source phrase Holm-adjusted CI do not specify an adjusted-interval algorithm or exact p-value derivation; multiple E4 pairwise tests/E6 components also leave family test units incomplete (U09). Render/retain estimates and unadjusted intervals with family decisions explicitly unresolved until clarified before outcomes; do not report raw intervals as Holm-adjusted.

Outputs: atom-000005/industry-contrasts.csv (T7; H2 theta, E4 proportional jumps and pairwise contrasts, division84_exclusion, missing_industry_exclusion; estimate, interval method, lower/upper, p_raw/p_adjusted where source-resolved, status, reason); industry-composition.csv (coarse class, share/count if cleared, status, reason); industry-events.csv (F4; classification=binary/three_way, class, event_month, hazard as fraction, status, reason; source-resolved cause-specific hazard levels; exact model-to-level mapping remains a pre-data display gate); mechanism-family-ledger.csv references atom-000006/mobility.csv. Execution-plan F4 names cause-specific hiring hazards and cites T7 model outputs, but does not supply the model-to-level transformation. That exact display mapping remains an unresolved pre-data requirement: no raw-mean substitute or fitted-level reconstruction from reference-normalized beta is authorized. The renderer consumes source-resolved hazard levels only after this mapping is supported; otherwise the F4 input remains

explicitly unavailable while independently reportable H2/E4 contrasts stay visible. Plotting introduces no estimator or confidence interval.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace $> 75\%$ for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```
id: atom-000005
topic: Industry screening signatures
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
concepts: []
literature: []
bonds: []
preregistration:
  version: 1
  mode: adaptive
  question: Are hiring changes concentrated in the source
    ↪ certificate-screening
      classes, including its public-certificate comparison?
  rationale: H2 and E4 concern one industry-proxy mechanism judgment on the
    same risk set. E4 refines that proxy and its division-84 sensitivity stays
    inside the unit. E6 remains distinct because it concerns already-employed
    workers and a different behavioral margin.
  assumption: The source assumptions and unresolved choices in
    ↪ prereg/identification.md
      and prereg/data-contract.md are maintained, not empirically validated
      by this conversion.
  target_strength: mechanistic
  target_shape: comparison
  ratings:
    importance: 3
    novelty: 1
    feasibility: 1
    data_advantage: 3
    informativeness: 0.0
  tables:
    - KRAF
    - KRIN
    - BFL
    - BEF
    - CPST
```

```

- VNDS_UD
activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) ==
"scope_fs") AND (state(atom-000002) == "archived_positive" OR
↪ state(atom-000002)
== "archived_other") AND (done(atom-000003) OR terminal(atom-000003) ==
"no_result") AND (done(atom-000004) OR terminal(atom-000004) ==
↪ "no_result")
verdicts:
- key: reporting_boundary
region: Observed certificate-intensive hires <1000 or any cell required
for theta violates the source disclosure minimum; H2 not estimated by
source rule.
says: Report only permitted descriptive H2 composition; record E4
↪ independently
if source requirements allow, without an H2 gradient claim.
- key: partial
region: Some source H2/E4 components are reportable but others or their
multiplicity adjudication are unavailable/unresolved.
says: Retain estimates component by component; no completed industry
↪ signature
claim.
- key: negative
region: Full required evidence and multiplicity available; theta<0 and
source Holm decision significant.
says: Exploratory disconfirmation of the employer-screening signature;
E4 pattern remains separately reported.
- key: positive
region: Full required evidence and multiplicity available; theta>0 and
source Holm decision significant.
says: Exploratory concentration signature, qualified by the complete E4
ordering; mechanism at most consistent-with.
- key: not_detected
region: Full required evidence and multiplicity available; theta not
↪ significant.
says: Signature not detected; weakens employer-side attribution without
accepting equality.
- key: otherwise
region: otherwise
says: Industry evidence remains unresolved; report all available coarse
composition and reasons.
protocol: |2

## Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit
↪ aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL
↪ conversion on 2026-09-05, not replication of a published empirical
↪ paper. Source target labels below are traceability only; this Atom ID
↪ owns identity, activation, protocol and local states. No independent
↪ reviewer has accepted the conversion. prereg/data-contract.md fixes
↪ the shared cohort, fields, joins, all seven Stage-B checks and unreso
↪ lved pre-data gates; prereg/identification.md fixes the maintained
↪ assumptions, estimator and inferential ceiling; prereg/governance.md
↪ fixes multiplicity, disclosure and failure reporting. Read these with
↪ this protocol. No source-silent choice may be filled at runtime.

```

All Atoms start pending, with no realized state or result. A missing
 ↪ source specification is an unresolved pre-data gate, not an observed
 ↪ data gap, statistical null, or permission to use a default. A
 ↪ documented empirical boundary can receive a local boundary state only
 ↪ after a permitted check actually establishes it. An attempted
 ↪ operation that produces no scientifically adjudicable evidence has
 ↪ terminal no_result; not_activated records its activation trace.
 ↪ Neither counts as done. Subcomponents that remain unestimable retain
 ↪ their own exact reason and all available components remain reported.
 ↪ Never convert missing or disclosure-withheld numbers into zero. An
 ↪ unavailable optional component cannot erase independently
 ↪ interpretable estimates; where the source explicitly makes its
 ↪ completion a prerequisite (Stage-0/Stage-B clearance; arm-T
 ↪ archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed
 ↪ execution artifact directory, never a claimed runtime mount. They are
 ↪ not created in this pre-data World. Each output row carries target,
 ↪ component, status, reason, inferential_tier, unit, sample_scope, and
 ↪ source_locator; available estimates carry estimate, se, lower, upper,
 ↪ p_raw, p_adjusted where defined, persons and risk_person_months where
 ↪ applicable. Include one row for each required unavailable target.
 ↪ Local states are evaluated first-match in listed order; component
 ↪ results and all claim restrictions remain visible even when one state
 ↪ takes precedence. The final otherwise catch-all means unresolved
 ↪ evidence, never support or equivalence. Graph keys do not overwrite
 ↪ source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18} \beta_k I[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-}$
 ↪ $\beta_k I[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-}$
 ↪ spell-duration FE (1-36 individual months, 37+ pooled) + arm FE in
 ↪ pooled F+S+C (or source-contingent F+S) only. Use $R \geq 4.3$,
 ↪ $\text{fixest::feols} \geq 0.11$, OLS LPM, person-cluster CR1 covariance; primary
 ↪ has no person FE and no other covariates. The deposited Stata reghdfe
 ↪ fallback is only promised; its complete identical specification must
 ↪ be frozen before execution. No new software versions or physical
 ↪ paths are inferred. For any contrast, retain the omitted -1
 ↪ coefficient as the defined reference zero and form its registered
 ↪ equal-bin linear combination and covariance, not raw pooled-window
 ↪ hazard means. The simulation's ratio-of-totals calculation is not a
 ↪ replacement estimator. $\text{delta} = \text{mean}(\beta_{0:5}) - \text{mean}(\beta_{-6:-1})$;
 ↪ $\text{delta_plac} = \text{mean}(\beta_{-12:-7}) - \text{mean}(\beta_{-18:-13})$. Estimate SE =
 ↪ $\sqrt{c' V_{CR1} c}$ and the registered two-sided Wald p and 95% CI.
 ↪ Missing/unidentified bins needed for a contrast are a nonestimability
 ↪ boundary; do not average only available bins. Raw binned hazards are
 ↪ separate descriptive outputs. Exact source-silent implementation
 ↪ choices remain in the pre-data gate ledger.

Source-preserved H2 frozen statement and forecast

id: H2

tier: exploratory

****statement initial**:** Compared to hires into industries with low
 ↳ certificate-screening intensity, the post-clearing increase in hiring
 ↳ will be larger for hires into certificate-intensive industries
 ↳ (childcare/education, finance and insurance, security and transport,
 ↳ public administration), classified pre-registration from
 ↳ AJO_BRANCHE07 using statutory certificate requirements.

****direction**:** positive

****comparator**:** Cause-specific hiring hazard into industries outside the
 ↳ frozen certificate-intensive DB07 list, in the same event window and
 ↳ risk set.

****exposure variable**:** Scheduled private-certificate clearing month (as
 ↳ in H1), interacted with the frozen certificate-intensive DB07
 ↳ classification of the started job (AJO_BRANCHE07): divisions 64-66
 ↳ (finance and insurance), 80 (security and investigation), 84 (public
 ↳ administration), 85 (education), group 88.91 (child day-care), and
 ↳ class 49.32 (taxi operation).

****outcome variable**:** Cause-specific monthly hiring hazard: probability
 ↳ of starting a BFL job in industry class c in month m, conditional on
 ↳ non-employment at the start of month m.

****estimand**:** The difference between certificate-intensive and other indu
 ↳ stries in the proportional jump of the cause-specific monthly hiring
 ↳ hazard at the scheduled clearing month, with the industry list frozen
 ↳ at Stage 1 from statutory certificate/authorization requirements.

****primary quantity**:** $\theta = (\delta_{\text{cert}} / \bar{h}_{\text{cert_pre}}) - (\delta_{\text{other}} / \bar{h}_{\text{other_pre}})$, where δ_c is the H1-style contrast for the
 ↳ cause-specific hazard of starting a job in industry class c and
 ↳ $\bar{h}_{c_pre}$ is that hazard's mean over event months -6..-1;
 ↳ person-cluster nonparametric bootstrap, 999 replications, percentile
 ↳ 95% CI; Holm-adjusted within the exploratory mechanism-signature
 ↳ family {H2, E4, E6}. Directional reading $\theta > 0$; a significantly
 ↳ negative θ is disconfirming for the employer-screening signature.
 ↳ Exploratory results cannot upgrade the confirmatory verdict.

****forecast**:** ****point**:** $\theta = +0.10$

****interval 90**:** [-0.08, +0.35]

****basis**:** Agent judgment (exploratory forecast): the design's floor
 ↳ concentration is $\theta_{\text{true}} = 0.142$ (certificate-intensive hires +20%
 ↳ relative vs +5.8% elsewhere); my central estimate sits below that
 ↳ floor because division 84's public-certificate 10-year horizon
 ↳ dilutes the treated class (the E4 refinement tests exactly this) and
 ↳ missing-industry coding drags θ toward zero under the
 ↳ pre-registered dual-coding rule.

****kill criterion**:** - Exploratory reporting gate: if observed hires into
 ↳ certificate-intensive industries across the event window number fewer
 ↳ than 1,000, or any cell required for θ falls below DST's minimum
 ↳ cell size, θ is not estimated; only the disclosure-compliant
 ↳ descriptive composition table is reported and no claim about the
 ↳ industry gradient is made.

Source-preserved E4

```

**id**: E4

**tier**: exploratory

**estimand**: Public-certificate located null: three-way refinement of
  ↳ the industry classification - (i) private-certificate statutory-screening private sectors, (ii) public-certificate sectors (DB07 division 84 and other authority-position sectors, where the public certificate's 10-year horizon means the employer-visible record does NOT expire at the private-certificate date; predicted attenuated/absent jump), (iii) low-screening sectors; predicted ordering of proportional jumps (i) > (iii) >= (ii). Includes the pre-specified H2 robustness column excluding division 84 from the certificate-intensive group.

**primary quantity**: Cause-specific proportional-jump contrasts across
  ↳ the three frozen classes with person-cluster bootstrap CIs; ordering evaluated descriptively plus pairwise Wald tests, Holm within {H2, E4, E6}.

## Execution detail

Use source binary DB07 prefix list 64-66,80,84,85,88.91,49.32; transport in the frozen statement operationalizes taxi class 49.32, without adding other transport. Normalize punctuation only through an evidenced code-format crosswalk, not inferred code membership. Derive each cause-specific hiring indicator from the source highest-paid-hours start in that month; all other at-risk months are zero for that cause. Use the same source risk set and H1-style contrast. Compute hbar_c_pre as the source preperiod mean [-6:-1], then  $\theta = \frac{\text{delta\_cert}}{\text{hbar\_cert\_pre} - \text{delta\_other\_pre}}$ . No zero-denominator repair: source-silent treatment is U08. Person-cluster nonparametric bootstrap 999 replications, percentile 95% CI, seed 20260818 per plan. H2 requires the <1000/cell gate before estimating theta. No finite-effect substitution for suppressed or insufficient hires.

E4 uses three classes: private-certificate private screening sectors, public-certificate sectors including division 84 and other authority-position sectors, low-screening. Exact authority-position list is missing (U08). Predict proportional jumps private > low >= public; report descriptive ordering and source pairwise Wald tests with bootstrap CIs. Include H2 excluding division 84. Do not add the audit's proposed exclusion of 85/88.91; retain its child-certificate attenuation concern in interpretation. If industry missingness >5%, H2/E4 primary treats missing as non-certificate-intensive and additionally excludes missing in sensitivity; how missing maps into E4's three classes and the primary treatment at <=5% are unfinished source choices, not guessed here. The two variants and discrepancy are mandatory when triggered.

Mechanism family {H2,E4,E6} uses Holm, coordinated across this Atom and atom-000006; no within-Atom substitute family. H2 percentile CI and the source phrase Holm-adjusted CI do not specify an adjusted-interval algorithm or exact p-value derivation; multiple E4 pairwise tests/E6 components also leave family test units incomplete (U09). Render/retain estimates and unadjusted intervals with family decisions explicitly unresolved until clarified before outcomes; do not report raw intervals as Holm-adjusted.

```

```

Outputs: atom-000005/industry-contrasts.csv (T7; H2 theta, E4
↳ proportional jumps and pairwise contrasts, division84_exclusion,
↳ missing_industry_exclusion; estimate, interval method, lower/upper,
↳ p_raw/p_adjusted where source-resolved, status, reason); industry-com
↳ position.csv (coarse class, share/count if cleared, status, reason);
↳ industry-events.csv (F4; classification=binary/three_way, class,
↳ event_month, hazard as fraction, status, reason; source-resolved
↳ cause-specific hazard levels; exact model-to-level mapping remains a
↳ pre-data display gate); mechanism-family-ledger.csv references
↳ atom-000006/mobility.csv. Execution-plan F4 names cause-specific
↳ hiring hazards and cites T7 model outputs, but does not supply the
↳ model-to-level transformation. That exact display mapping remains an
↳ unresolved pre-data requirement: no raw-mean substitute or
↳ fitted-level reconstruction from reference-normalized beta is
↳ authorized. The renderer consumes source-resolved hazard levels only
↳ after this mapping is supported; otherwise the F4 input remains
↳ explicitly unavailable while independently reportable H2/E4 contrasts
↳ stay visible. Plotting introduces no estimator or confidence interval.

```

Reproducibility and disclosure

```

Future governed execution records input metadata/vintages, transformation
↳ s, row-count reconciliation, software and seed (execution plan
↳ specifies 20260818), estimator/contrast definitions, exclusions,
↳ activation traces, component statuses and archive timestamps. All
↳ rows remain inside the governed environment. Only cleared aggregate
↳ outputs feed figures; source thresholds are >=5 persons, additionally
↳ >=3 workplaces and no workplace >75% for workplace/industry
↳ tabulations. No invented disclosure aggregation algorithm: the source
↳ promises collapse to other/adjacent-bin presentation, but exact
↳ collapse precedence remains a pre-data gate where consequential. No
↳ microdata, model fits, simulations, or newly observed estimates are
↳ produced in this conversion. Synthetic plotting-interface checks are
↳ permitted outside the World and must never populate manuscript slots.

```

Are hiring changes concentrated in the source certificate-screening classes, including its public-certificate comparison?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See [prereg/replication/conversion-audit.md](#).

Reference implementation

Entry point and supported/unresolved components for atom-000005: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.

atom-000006: Employed worker mobility

Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. prereg/data-contract.md fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; prereg/identification.md fixes the maintained assumptions, estimator and inferential ceiling; prereg/governance.md fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal no_result; not_activated records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18, k \neq -1} \beta_k 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in pooled F+S+C (or source-contingent F+S) only}$. Use $R \geq 4.3$, $\text{fixest::feols} \geq 0.11$, OLS LPM, person-cluster CR1 covariance; primary has no person FE and no other covariates. The deposited Stata reghdfe fallback is only promised; its complete identical specification must be frozen before execution. No new software versions or physical paths are inferred. For any contrast, retain the omitted -1 coefficient as the defined reference zero and

form its registered equal-bin linear combination and covariance, not raw pooled-window hazard means. The simulation's ratio-of-totals calculation is not a replacement estimator. $\text{delta} = \text{mean}(\text{beta}[0:5]) - \text{mean}(\text{beta}[-6:-1])$; $\text{delta_plac} = \text{mean}(\text{beta}[-12:-7]) - \text{mean}(\text{beta}[-18:-13])$. Estimate $\text{SE} = \sqrt{c' V_{\text{CR1}} c}$ and the registered two-sided Wald p and 95% CI. Missing/unidentified bins needed for a contrast are a nonestimability boundary; do not average only available bins. Raw binned hazards are separate descriptive outputs. Exact source-silent implementation choices remain in the pre-data gate ledger.

Source-preserved E6

id: E6

tier: exploratory

estimand: Employed-worker directed mobility: among single-conviction persons employed in event month -1, the hazard of a workplace change (new AJO_ARBNR_SENR) in [0,+5] vs [-6,-1] and its interaction with a certificate-intensive destination (AJO_BRANCHE07); a post-clearing rise in directed job-to-job moves apportioned part of the total informational effect to worker-side search.

primary quantity: LPM contrast for job-to-job moves and its certificate-destination interaction, person-clustered SEs; Holm within {H2, E4, E6}. ## Worker-search margin implementation

Source locators: `prereg.yaml` E6, `analysis_plan.estimate_order_lock`, data BFL fields; execution plan S14/4.3/T7. Restrict baseline to source single-conviction persons employed in event month -1. Preserve source event-window comparison [0,+5] vs [-6,-1], using a new AJO_ARBNR_SENR workplace as outcome and its certificate-intensive destination interaction. The source calls for an LPM and person-cluster CR1; frozen exact treatment of multiple concurrent baseline workplaces, job-to-job continuity, at-risk denominator after leaving employment, destination interaction parameterization and missing workplace IDs is unfinished (U10); do not turn all job starts into job-to-job moves. E6's different risk set is mandatory, not conditioned on an H2 favorable finding or H1 support.

Current FSV documents AJO_ARBNR_SENR only 200812-201712, while start/end/industry fields extend through 202512. This is a documented coverage concern, not a runtime failure and not permission to use a new workplace identifier. Resolve an evidenced meaning-preserving crosswalk before data; if unavailable preserve this module's explicit boundary while other modules proceed under their own rules.

Apply source mechanism Holm family jointly with H2/E4 in atom-000005; U09 leaves the exact E6 main/interaction test counting unresolved. Outputs atom-000006/mobility.csv (T7; E6 mobility and certificate_destination_interaction as separate rows, estimate, se, 95% CI, p_raw/p_adjusted where specified, unit, risk_set definition, status, reason), destination-composition.csv (coarse descriptive classes only). A post-clearing directed mobility rise is consistent with worker-side search retiming; no numerical decomposition of an employer versus worker causal share is identified or added.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace $> 75\%$ for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```
id: atom-000006
topic: Employed worker mobility
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
concepts: []
literature: []
bonds: []
preregistration:
  version: 1
  mode: adaptive
  question: Do already-employed record holders change workplaces toward
    ↪ certificate-screening
    destinations around scheduled clearing?
  rationale: E6 tests an independent worker-search margin in those employed
    at month -1, distinct from job finding among the non-employed and from
    an industry split of those hires.
  assumption: The source assumptions and unresolved choices in
    ↪ prereg/identification.md
    and prereg/data-contract.md are maintained, not empirically validated
    by this conversion.
  target_strength: mechanistic
  target_shape: comparison
  ratings:
    importance: 3
    novelty: 1
    feasibility: 1
    data_advantage: 3
    informativeness: 0.0
  tables:
    - KRAF
    - KRIN
    - BFL
    - BEF
    - CPST
    - VNDS_UD
  activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) ==
    "scope_fs") AND (state(atom-000002) == "archived_positive" OR
    ↪ state(atom-000002)
    == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) ==
```

```

"no_result") AND (done(atom-000004) OR terminal(atom-000004) ==
↳ "no_result")
verdicts:
- key: partial
  region: One E6 component is reportable but destination/other required
    component or family decision is unresolved.
  says: Keep mobility and directed-destination evidence separately; no
    ↳ completed
    worker-side signature claim.
- key: reported
  region: All registered E6 components and family decisions are available.
  says: Report signs, CIs and significant opposite-direction evidence
    ↳ separately;
    worker-side attribution remains exploratory and non-unique.
- key: boundary
  region: An evidenced source measurement/coverage boundary prevents every
    E6 component.
  says: No mobility estimate; this does not erase H1 or the industry module.
- key: otherwise
  region: otherwise
  says: E6 remains unresolved, not a statistical null.
protocol: |2

```

Shared execution contract (incorporated by reference)

```

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit
↳ aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL
↳ conversion on 2026-09-05, not replication of a published empirical
↳ paper. Source target labels below are traceability only; this Atom ID
↳ owns identity, activation, protocol and local states. No independent
↳ reviewer has accepted the conversion. prereg/data-contract.md fixes
↳ the shared cohort, fields, joins, all seven Stage-B checks and unreso
↳ lved pre-data gates; prereg/identification.md fixes the maintained
↳ assumptions, estimator and inferential ceiling; prereg/governance.md
↳ fixes multiplicity, disclosure and failure reporting. Read these with
↳ this protocol. No source-silent choice may be filled at runtime.

```

```

All Atoms start pending, with no realized state or result. A missing
↳ source specification is an unresolved pre-data gate, not an observed
↳ data gap, statistical null, or permission to use a default. A
↳ documented empirical boundary can receive a local boundary state only
↳ after a permitted check actually establishes it. An attempted
↳ operation that produces no scientifically adjudicable evidence has
↳ terminal no_result; not_activated records its activation trace.
↳ Neither counts as done. Subcomponents that remain unestimable retain
↳ their own exact reason and all available components remain reported.
↳ Never convert missing or disclosure-withheld numbers into zero. An
↳ unavailable optional component cannot erase independently
↳ interpretable estimates; where the source explicitly makes its
↳ completion a prerequisite (Stage-0/Stage-B clearance; arm-T
↳ archival), that prerequisite remains binding.

```

All outputs named below are logical paths relative to a future governed
 ↪ execution artifact directory, never a claimed runtime mount. They are
 ↪ not created in this pre-data World. Each output row carries target,
 ↪ component, status, reason, inferential_tier, unit, sample_scope, and
 ↪ source_locator; available estimates carry estimate, se, lower, upper,
 ↪ p_raw, p_adjusted where defined, persons and risk_person_months where
 ↪ applicable. Include one row for each required unavailable target.
 ↪ Local states are evaluated first-match in listed order; component
 ↪ results and all claim restrictions remain visible even when one state
 ↪ takes precedence. The final otherwise catch-all means unresolved
 ↪ evidence, never support or equivalence. Graph keys do not overwrite
 ↪ source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{-1} \beta_k$
 ↪ β_k 1[event_month=k] + calendar-year-by-month FE + non-employment-
 ↪ spell-duration FE (1-36 individual months, 37+ pooled) + arm FE in
 ↪ pooled F+S+C (or source-contingent F+S) only. Use $R \geq 4.3$,
 ↪ `fixest::feols` ≥ 0.11 , OLS LPM, person-cluster CR1 covariance; primary
 ↪ has no person FE and no other covariates. The deposited Stata `reghdfe`
 ↪ fallback is only promised; its complete identical specification must
 ↪ be frozen before execution. No new software versions or physical
 ↪ paths are inferred. For any contrast, retain the omitted -1
 ↪ coefficient as the defined reference zero and form its registered
 ↪ equal-bin linear combination and covariance, not raw pooled-window
 ↪ hazard means. The simulation's ratio-of-totals calculation is not a
 ↪ replacement estimator. $\Delta = \text{mean}(\beta_{0:5}) - \text{mean}(\beta_{-6:-1})$;
 ↪ $\Delta_{\text{plac}} = \text{mean}(\beta_{-12:-7}) - \text{mean}(\beta_{-18:-13})$. Estimate SE =
 ↪ $\sqrt{c' V_{\text{CR1}} c}$ and the registered two-sided Wald p and 95% CI.
 ↪ Missing/unidentified bins needed for a contrast are a nonestimability
 ↪ boundary; do not average only available bins. Raw binned hazards are
 ↪ separate descriptive outputs. Exact source-silent implementation
 ↪ choices remain in the pre-data gate ledger.

Source-preserved E6

****id**:** E6

****tier**:** exploratory

****estimand**:** Employed-worker directed mobility: among single-conviction
 ↪ persons employed in event month -1, the hazard of a workplace change
 ↪ (new AJO_ARBNR_SENR) in [0,+5] vs [-6,-1] and its interaction with a
 ↪ certificate-intensive destination (AJO_BRANCHE07); a post-clearing
 ↪ rise in directed job-to-job moves apportioned part of the total
 ↪ informational effect to worker-side search.

****primary quantity**:** LPM contrast for job-to-job moves and its
 ↪ certificate-destination interaction, person-clustered SEs; Holm
 ↪ within {H2, E4, E6}.

Worker-search margin implementation

Source locators: prereg.yaml E6, analysis_plan.estimated_order_lock,
 ↳ data BFL fields; execution plan S14/4.3/T7. Restrict baseline to
 ↳ source single-conviction persons employed in event month -1. Preserve
 ↳ source event-window comparison [0,+5] vs [-6,-1], using a new
 ↳ AJO_ARBNR_SENR workplace as outcome and its certificate-intensive
 ↳ destination interaction. The source calls for an LPM and
 ↳ person-cluster CR1; frozen exact treatment of multiple concurrent
 ↳ baseline workplaces, job-to-job continuity, at-risk denominator after
 ↳ leaving employment, destination interaction parameterization and
 ↳ missing workplace IDs is unfinished (U10); do not turn all job starts
 ↳ into job-to-job moves. E6's different risk set is mandatory, not
 ↳ conditioned on an H2 favorable finding or H1 support.

Current FSV documents AJO_ARBNR_SENR only 200812-201712, while
 ↳ start/end/industry fields extend through 202512. This is a documented
 ↳ coverage concern, not a runtime failure and not permission to use a
 ↳ new workplace identifier. Resolve an evidenced meaning-preserving
 ↳ crosswalk before data; if unavailable preserve this module's explicit
 ↳ boundary while other modules proceed under their own rules.

Apply source mechanism Holm family jointly with H2/E4 in atom-000005; U09
 ↳ leaves the exact E6 main/interaction test counting unresolved.
 ↳ Outputs atom-000006/mobility.csv (T7; E6 mobility and
 ↳ certificate_destination interaction as separate rows, estimate, se,
 ↳ 95% CI, p_raw/p_adjusted where specified, unit, risk_set definition,
 ↳ status, reason), destination-composition.csv (coarse descriptive
 ↳ classes only). A post-clearing directed mobility rise is consistent
 ↳ with worker-side search retiming; no numerical decomposition of an
 ↳ employer versus worker causal share is identified or added.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformation,
 ↳ s, row-count reconciliation, software and seed (execution plan
 ↳ specifies 20260818), estimator/contrast definitions, exclusions,
 ↳ activation traces, component statuses and archive timestamps. All
 ↳ rows remain inside the governed environment. Only cleared aggregate
 ↳ outputs feed figures; source thresholds are ≥5 persons, additionally
 ↳ ≥3 workplaces and no workplace >75% for workplace/industry
 ↳ tabulations. No invented disclosure aggregation algorithm: the source
 ↳ promises collapse to other/adjacent-bin presentation, but exact
 ↳ collapse precedence remains a pre-data gate where consequential. No
 ↳ microdata, model fits, simulations, or newly observed estimates are
 ↳ produced in this conversion. Synthetic plotting-interface checks are
 ↳ permitted outside the World and must never populate manuscript slots.

Do already-employed record holders change workplaces toward certificate-screening destinations around scheduled clearing?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See prereg/replication/conversion-audit.md.

Reference implementation

Entry point and supported/unresolved components for `atom-000006`: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.

atom-000007: Job quality and earnings

Shared execution contract (incorporated by reference)

The scientific authority is source `prereg.yaml v1.0`, 2026-08-21, commit `aa65f6764ddf`, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. `prereg/data-contract.md` fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; `prereg/identification.md` fixes the maintained assumptions, estimator and inferential ceiling; `prereg/governance.md` fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal `no_result`; `not_activated` records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global `atom_result`.

Source-preserved E1

id: E1

tier: exploratory

estimand: Among post-clearing versus pre-clearing hires, differences in starting-job monthly paid hours (`AJO_LOENTIMER`) and narrow wage (`AJO_SMALT_LOENBELOEB`) in the first full job month.

primary quantity: OLS difference in winsorized hours and log wage, post vs pre indicator, person-clustered SEs; Holm within the exploratory job-quality family {E1, E2, E3}.

Source-preserved E2

id: E2

tier: exploratory

estimand: Annual total wage income (LOENMV_13, HKV Personal incomes, valid from 01-01-1987) in the first and second calendar years after the scheduled clearing year versus the two calendar years before, within person (register-independent earnings check covering self-employment-adjacent wage income).

primary quantity: Within-person mean difference in winsorized LOENMV_13, person-clustered SEs; Holm within {E1, E2, E3}.

Source-preserved E3

id: E3

tier: exploratory

estimand: Durability of post-clearing matches: probability that a job started in event months 0..+5 survives at least 6 months (AJO_JOB_SLUT_DATO - AJO_JOB_START_DATO >= 180 days), versus jobs started in -6..-1.

primary quantity: Difference in 6-month survival shares, person-clustered SEs; Holm within {E1, E2, E3}. ## Execution detail and unresolved choices

Source locators: prereg.yaml E1-E3, outlier_rule/missing_data_rule, timeline D; execution plan 4.3/T8. E1 compares hires in months [0,+5] with [-6,-1] in first-full-job-month hours and log narrow wage via OLS post indicator with person-cluster SE. Keep hours and log wage separate. YAML outlier rule winsorizes AJO_SMALT_LOENBELOEB and LOENMV_13 at year-specific 1st/99th percentiles and sets hours>400 to missing. E1 primary_quantity additionally says winsorized hours, without specifying its rule; U12 preserves the conflict. First full month for short jobs and log of nonpositive wages are undefined; do not invent trimming, log1p or exclusion. Never publish disclosive realized cutpoints.

E2: at person level compare mean winsorized annual LOENMV_13 in clearing-year+1 and +2 with clearing-year-2 and -1, within person, clustered by person. Clearing year itself is omitted. Source does not specify missing annual years or calendar-year coverage fallback; no available-year mean or zero filling. The income field is wage income, not a newly authorized self-employment outcome. Its source 'self-employment-adjacent' description does not expand scope.

E3: jobs started [0,+5] vs [-6,-1]; survival indicator (AJO_JOB_SLUT_DATO - AJO_JOB_START_DATO)>=180 days; difference in survival shares with person-cluster SE. Source uses 180 days, not an invented six-calendar-month rule. Incomplete follow-up/missing end dates and whether E1/E3 include all starts or only the source selected most-hours start are unfinished U12. Preserve known independent components and make unavailable components explicit.

Holm family {E1,E2,E3} stays exactly named. Source gives multiple E1 outcomes and does not define a single E1 p-value or number of component tests

(U09). No new joint test, minimum-p method or family-size reduction. Outputs atom-000007/job-quality.csv (T8; E1_hours unit hours/month, E1_log_wage unit log currency, E2_annual_wage unit DKK/year subject to source field-unit verification, E3_survival unit probability difference; estimate,se,lower,upper,p_raw,p_adjusted if resolved,status,reason); family-ledger.csv (all named members/components and adjustment disposition). No new figures are authorized for this module.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace $> 75\%$ for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```
id: atom-000007
topic: Job quality and earnings
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
concepts: []
literature: []
bonds: []
preregistration:
  version: 1
  mode: adaptive
  question: How do the source post-clearing hires, their durability and annual
    wages compare with the pre-clearing period?
  rationale: E1-E3 jointly describe the source job-quality/earnings module.
    Hours and wages, within-person annual wages, and match survival remain
    distinct estimands and component results; missing annual income must not
    erase match evidence.
  assumption: The source assumptions and unresolved choices in
    ↪ prereg/identification.md
    and prereg/data-contract.md are maintained, not empirically validated
    by this conversion.
  target_strength: associational
  target_shape: comparison
  ratings:
    importance: 3
    novelty: 1
    feasibility: 1
    data_advantage: 3
    informativeness: 0.0
  tables:
```

- KRAF
- KRIN
- BFL
- BEF
- CPST
- VNDS_UD
- IND

activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) == "scope_fs") AND (state(atom-000002) == "archived_positive" OR state(atom-000002) == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) == "no_result")

verdicts:

- key: partial
 - region: At least one E1/E2/E3 component is reportable but another or the job-quality family decision is unresolved/unavailable.
 - says: Report each available outcome and missingness reason; no composite quality score.
- key: reported
 - region: All registered job-quality components and family decisions are available.
 - says: Report outcome-specific estimates, CIs and any discordant directions as exploratory associations.
- key: boundary
 - region: An evidenced measurement or coverage boundary prevents every E1-E3 component.
 - says: Job quality cannot be evaluated within this scope; no null finding.
- key: otherwise
 - region: otherwise
 - says: The module remains unresolved; no implication for H1.

protocol: |2

Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. prereg/data-contract.md fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; prereg/identification.md fixes the maintained assumptions, estimator and inferential ceiling; prereg/governance.md fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal no_result; not_activated records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed
 ↪ execution artifact directory, never a claimed runtime mount. They are
 ↪ not created in this pre-data World. Each output row carries target,
 ↪ component, status, reason, inferential_tier, unit, sample_scope, and
 ↪ source_locator; available estimates carry estimate, se, lower, upper,
 ↪ p_raw, p_adjusted where defined, persons and risk_person_months where
 ↪ applicable. Include one row for each required unavailable target.
 ↪ Local states are evaluated first-match in listed order; component
 ↪ results and all claim restrictions remain visible even when one state
 ↪ takes precedence. The final otherwise catch-all means unresolved
 ↪ evidence, never support or equivalence. Graph keys do not overwrite
 ↪ source statements or global atom_result.

Source-preserved E1

****id**:** E1

****tier**:** exploratory

****estimand**:** Among post-clearing versus pre-clearing hires, differences
 ↪ in starting-job monthly paid hours (AJO_LOENTIMER) and narrow wage
 ↪ (AJO_SMALT_LOENBELOEB) in the first full job month.

****primary quantity**:** OLS difference in winsorized hours and log wage,
 ↪ post vs pre indicator, person-clustered SEs; Holm within the
 ↪ exploratory job-quality family {E1, E2, E3}.

Source-preserved E2

****id**:** E2

****tier**:** exploratory

****estimand**:** Annual total wage income (LOENMV_13, HKV Personal incomes,
 ↪ valid from 01-01-1987) in the first and second calendar years after
 ↪ the scheduled clearing year versus the two calendar years before,
 ↪ within person (register-independent earnings check covering
 ↪ self-employment-adjacent wage income).

****primary quantity**:** Within-person mean difference in winsorized
 ↪ LOENMV_13, person-clustered SEs; Holm within {E1, E2, E3}.

Source-preserved E3

****id**:** E3

****tier**:** exploratory

****estimand**:** Durability of post-clearing matches: probability that a job
 ↪ started in event months 0..+5 survives at least 6 months
 ↪ (AJO_JOB_SLUT_DATO - AJO_JOB_START_DATO >= 180 days), versus jobs
 ↪ started in -6..-1.

****primary quantity**:** Difference in 6-month survival shares,
 ↪ person-clustered SEs; Holm within {E1, E2, E3}.

Execution detail and unresolved choices

Source locators: prereg.yaml E1-E3, outlier_rule/missing_data_rule,
 ↪ timeline D; execution plan 4.3/T8. E1 compares hires in months [0,+5]
 ↪ with [-6,-1] in first-full-job-month hours and log narrow wage via
 ↪ OLS post indicator with person-cluster SE. Keep hours and log wage
 ↪ separate. YAML outlier rule winsorizes AJ0_SMALT_LOENBEL0EB and
 ↪ LOENMV_13 at year-specific 1st/99th percentiles and sets hours>400 to
 ↪ missing. E1 primary_quantity additionally says winsorized hours,
 ↪ without specifying its rule; U12 preserves the conflict. First full
 ↪ month for short jobs and log of nonpositive wages are undefined; do
 ↪ not invent trimming, log1p or exclusion. Never publish disclosive
 ↪ realized cutpoints.

E2: at person level compare mean winsorized annual LOENMV_13 in
 ↪ clearing-year+1 and +2 with clearing-year-2 and -1, within person,
 ↪ clustered by person. Clearing year itself is omitted. Source does not
 ↪ specify missing annual years or calendar-year coverage fallback; no
 ↪ available-year mean or zero filling. The income field is wage income,
 ↪ not a newly authorized self-employment outcome. Its source
 ↪ 'self-employment-adjacent' description does not expand scope.

E3: jobs started [0,+5] vs [-6,-1]; survival indicator (AJ0_JOB_SLUT_DAT0
 ↪ - AJ0_JOB_START_DAT0)>=180 days; difference in survival shares with
 ↪ person-cluster SE. Source uses 180 days, not an invented
 ↪ six-calendar-month rule. Incomplete follow-up/missing end dates and
 ↪ whether E1/E3 include all starts or only the source selected
 ↪ most-hours start are unfinished U12. Preserve known independent
 ↪ components and make unavailable components explicit.

Holm family {E1,E2,E3} stays exactly named. Source gives multiple E1
 ↪ outcomes and does not define a single E1 p-value or number of
 ↪ component tests (U09). No new joint test, minimum-p method or
 ↪ family-size reduction. Outputs atom-000007/job-quality.csv (T8;
 ↪ E1_hours unit hours/month, E1_log_wage unit log currency,
 ↪ E2_annual_wage unit DKK/year subject to source field-unit
 ↪ verification, E3_survival unit probability difference;
 ↪ estimate,se,lower,upper,p_raw,p_adjusted if resolved,status,reason);
 ↪ family-ledger.csv (all named members/components and adjustment
 ↪ disposition). No new figures are authorized for this module.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformation,
 ↪ s, row-count reconciliation, software and seed (execution plan
 ↪ specifies 20260818), estimator/contrast definitions, exclusions,
 ↪ activation traces, component statuses and archive timestamps. All
 ↪ rows remain inside the governed environment. Only cleared aggregate
 ↪ outputs feed figures; source thresholds are >=5 persons, additionally
 ↪ >=3 workplaces and no workplace >75% for workplace/industry
 ↪ tabulations. No invented disclosure aggregation algorithm: the source
 ↪ promises collapse to other/adjacent-bin presentation, but exact
 ↪ collapse precedence remains a pre-data gate where consequential. No
 ↪ microdata, model fits, simulations, or newly observed estimates are
 ↪ produced in this conversion. Synthetic plotting-interface checks are
 ↪ permitted outside the World and must never populate manuscript slots.

How do the source post-clearing hires, their durability and annual wages compare with the pre-clearing period?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See [prereg/replication/conversion-audit.md](#).

Reference implementation

Entry point and supported/unresolved components for `atom-000007`: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.

atom-000008: Benefit clock audit

Shared execution contract (incorporated by reference)

The scientific authority is source `prereg.yaml` v1.0, 2026-08-21, commit `aa65f6764ddf`, including amendments A1-A4. This is SOURCE-PROTOCOL conversion on 2026-09-05, not replication of a published empirical paper. Source target labels below are traceability only; this Atom ID owns identity, activation, protocol and local states. No independent reviewer has accepted the conversion. `prereg/data-contract.md` fixes the shared cohort, fields, joins, all seven Stage-B checks and unresolved pre-data gates; `prereg/identification.md` fixes the maintained assumptions, estimator and inferential ceiling; `prereg/governance.md` fixes multiplicity, disclosure and failure reporting. Read these with this protocol. No source-silent choice may be filled at runtime.

All Atoms start pending, with no realized state or result. A missing source specification is an unresolved pre-data gate, not an observed data gap, statistical null, or permission to use a default. A documented empirical boundary can receive a local boundary state only after a permitted check actually establishes it. An attempted operation that produces no scientifically adjudicable evidence has terminal `no_result`; `not_activated` records its activation trace. Neither counts as done. Subcomponents that remain unestimable retain their own exact reason and all available components remain reported. Never convert missing or disclosure-withheld numbers into zero. An unavailable optional component cannot erase independently interpretable estimates; where the source explicitly makes its completion a prerequisite (Stage-0/Stage-B clearance; arm-T archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed execution artifact directory, never a claimed runtime mount. They are not created in this pre-data World. Each output row carries target, component, status, reason, inferential_tier, unit, sample_scope, and source_locator; available estimates carry estimate, se, lower, upper, p_raw, p_adjusted where defined, persons and risk_person_months where applicable. Include one row for each required unavailable target. Local states are evaluated first-match in listed order; component results and all claim restrictions remain visible even when one state takes precedence. The final otherwise catch-all

means unresolved evidence, never support or equivalence. Graph keys do not overwrite source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18} \beta_k 1[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-spell-duration FE (1-36 individual months, 37+ pooled)} + \text{arm FE in pooled F+S+C (or source-contingent F+S) only}$. Use $R \geq 4.3$, `fixest::feols` ≥ 0.11 , OLS LPM, person-cluster CR1 covariance; primary has no person FE and no other covariates. The deposited Stata `reghdfe` fallback is only promised; its complete identical specification must be frozen before execution. No new software versions or physical paths are inferred. For any contrast, retain the omitted -1 coefficient as the defined reference zero and form its registered equal-bin linear combination and covariance, not raw pooled-window hazard means. The simulation's ratio-of-totals calculation is not a replacement estimator. $\text{delta} = \text{mean}(\beta_{[0:5]}) - \text{mean}(\beta_{[-6:-1]})$; $\text{delta_plac} = \text{mean}(\beta_{[-12:-7]}) - \text{mean}(\beta_{[-18:-13]})$. Estimate $\text{SE} = \sqrt{c' V_{\text{CR1}} c}$ and the registered two-sided Wald p and 95% CI. Missing/unidentified bins needed for a contrast are a nonestimability boundary; do not average only available bins. Raw binned hazards are separate descriptive outputs. Exact source-silent implementation choices remain in the pre-data gate ledger.

Source-preserved E5

id: E5

tier: exploratory

estimand: Benefit-state decomposition: each risk-set person-month classified at month start as registered unemployment/activation versus other non-employment using `PTI_TILSTAND_KODE` spells with `PTI_VFRA/PTI_VTIL` (HKV Publicly maintained persons, valid from 01-01-2007); state-specific `delta_main` contrasts and their difference — the direct empirical audit of the benefit-exhaustion/activation-clock confound otherwise handled by the arm-T netting argument.

primary quantity: `delta_main(UI/activation state)` and `delta_main(other non-employment)` with person-clustered SEs and their Wald difference; E5 is the audit family's single test (uncorrected); E7 appears with the audit analyses in presentation only. `## Execution detail`

Source locators: `prereg.yaml` E5, `preprocessing[PTI]`, `missing_data_rule` and `multiple_comparisons`; execution plan S12/T9. Classify month-start risk-set person-months using `PTI_TILSTAND_KODE` and `PTI_VFRA <= first-of-month <= PTI_VTIL`: registered unemployment/activation versus other non-employment. No covering spell means other only after source completeness and linkage are established. Do not treat a missing table as absence of a spell. Exact historical code list and overlap-resolution table are not supplied; the plan asserts an analysis-script UI/activation priority rule that neither skeleton implements (U13). Current OF documentation records a July-2017 code change to 5025; this is a locator for the required vintage mapping, not a complete code list.

Estimate each state's source H1-style contrast and their difference with joint person covariance. E5 is explicitly the single audit test, uncorrected, in the final YAML E5 primary_quantity. E7 is presented beside it only; E7's correction remains in schedule family. Do not resurrect the audit report's stale allegation of an operative {E5,E7} family.

Outputs atom-000008/benefit-audit.csv (T9; UI_activation delta, other delta, between_state difference; estimate,se,95% CI,p_raw for the single difference,status,reason); state-composition.csv (month-start class, source code-map version, permissible counts/shares). No new confirmatory subgroup or causal-benefit mechanism is introduced. The source does not set a decisive magnitude or diagnostic significance gate here, so local reported means evidence present, not benefit-clock confounding demonstrated or excluded.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformations, row-count reconciliation, software and seed (execution plan specifies 20260818), estimator/contrast definitions, exclusions, activation traces, component statuses and archive timestamps. All rows remain inside the governed environment. Only cleared aggregate outputs feed figures; source thresholds are ≥ 5 persons, additionally ≥ 3 workplaces and no workplace $> 75\%$ for workplace/industry tabulations. No invented disclosure aggregation algorithm: the source promises collapse to other/adjacent-bin presentation, but exact collapse precedence remains a pre-data gate where consequential. No microdata, model fits, simulations, or newly observed estimates are produced in this conversion. Synthetic plotting-interface checks are permitted outside the World and must never populate manuscript slots.

Complete registration fields

```
id: atom-000008
topic: Benefit clock audit
atom_result: prereg
atom_strength: null
atom_shape: null
evidence_paths: []
concepts: []
literature: []
bonds: []
preregistration:
  version: 1
  mode: adaptive
  question: Does the source job-finding contrast differ between registered
    unemployment or activation and other non-employment?
  rationale: E5 is a distinct consequential audit of a benefit-clock
    ↪ alternative
      explanation, using month-start PTI states. It stays exploratory and cannot
      repair a failed H1 falsification.
  assumption: The source assumptions and unresolved choices in
    ↪ prereg/identification.md
      and prereg/data-contract.md are maintained, not empirically validated
      by this conversion.
  target_strength: descriptive
```

```

target_shape: comparison
ratings:
  importance: 3
  novelty: 1
  feasibility: 1
  data_advantage: 3
  informativeness: 0.0
tables:
- KRAF
- KRIN
- BFL
- BEF
- CPST
- VNDS_UD
- OF
activation: (state(atom-000001) == "scope_fsc" OR state(atom-000001) ==
"scope_fs") AND (state(atom-000002) == "archived_positive" OR
  ↳ state(atom-000002)
  == "archived_other") AND (done(atom-000003) OR terminal(atom-000003) ==
  "no_result")
verdicts:
- key: partial
  region: At least one E5 state contrast is reportable but the other or
  their difference is unavailable.
  says: Report state-specific evidence and missing comparison; no concluded
  benefit-clock explanation.
- key: reported
  region: Both state contrasts and their registered Wald difference are
  available.
  says: Report all signs and CIs as an exploratory audit; no new threshold
  or causal mechanism decision.
- key: boundary
  region: Evidenced PTI mapping/coverage/estimability boundary prevents
  every E5 target.
  says: Benefit-clock audit unavailable; no evidence of an absent confound.
- key: otherwise
  region: otherwise
  says: Benefit-state decomposition remains unresolved.
protocol: |2

## Shared execution contract (incorporated by reference)

The scientific authority is source prereg.yaml v1.0, 2026-08-21, commit
↳ aa65f6764ddf, including amendments A1-A4. This is SOURCE-PROTOCOL
↳ conversion on 2026-09-05, not replication of a published empirical
↳ paper. Source target labels below are traceability only; this Atom ID
↳ owns identity, activation, protocol and local states. No independent
↳ reviewer has accepted the conversion. prereg/data-contract.md fixes
↳ the shared cohort, fields, joins, all seven Stage-B checks and unreso
↳ lved pre-data gates; prereg/identification.md fixes the maintained
↳ assumptions, estimator and inferential ceiling; prereg/governance.md
↳ fixes multiplicity, disclosure and failure reporting. Read these with
↳ this protocol. No source-silent choice may be filled at runtime.

```

All Atoms start pending, with no realized state or result. A missing
 ↪ source specification is an unresolved pre-data gate, not an observed
 ↪ data gap, statistical null, or permission to use a default. A
 ↪ documented empirical boundary can receive a local boundary state only
 ↪ after a permitted check actually establishes it. An attempted
 ↪ operation that produces no scientifically adjudicable evidence has
 ↪ terminal no_result; not_activated records its activation trace.
 ↪ Neither counts as done. Subcomponents that remain unestimable retain
 ↪ their own exact reason and all available components remain reported.
 ↪ Never convert missing or disclosure-withheld numbers into zero. An
 ↪ unavailable optional component cannot erase independently
 ↪ interpretable estimates; where the source explicitly makes its
 ↪ completion a prerequisite (Stage-0/Stage-B clearance; arm-T
 ↪ archival), that prerequisite remains binding.

All outputs named below are logical paths relative to a future governed
 ↪ execution artifact directory, never a claimed runtime mount. They are
 ↪ not created in this pre-data World. Each output row carries target,
 ↪ component, status, reason, inferential_tier, unit, sample_scope, and
 ↪ source_locator; available estimates carry estimate, se, lower, upper,
 ↪ p_raw, p_adjusted where defined, persons and risk_person_months where
 ↪ applicable. Include one row for each required unavailable target.
 ↪ Local states are evaluated first-match in listed order; component
 ↪ results and all claim restrictions remain visible even when one state
 ↪ takes precedence. The final otherwise catch-all means unresolved
 ↪ evidence, never support or equivalence. Graph keys do not overwrite
 ↪ source statements or global atom_result.

Hazard implementation

On the source person-month risk set, fit $y_{im} = \sum_{k=-24}^{18} \beta_k I[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-}$
 ↪ $\beta_k I[\text{event_month}=k] + \text{calendar-year-by-month FE} + \text{non-employment-}$
 ↪ spell-duration FE (1-36 individual months, 37+ pooled) + arm FE in
 ↪ pooled F+S+C (or source-contingent F+S) only. Use $R \geq 4.3$,
 ↪ $\text{fixest::feols} \geq 0.11$, OLS LPM, person-cluster CR1 covariance; primary
 ↪ has no person FE and no other covariates. The deposited Stata reghdfe
 ↪ fallback is only promised; its complete identical specification must
 ↪ be frozen before execution. No new software versions or physical
 ↪ paths are inferred. For any contrast, retain the omitted -1
 ↪ coefficient as the defined reference zero and form its registered
 ↪ equal-bin linear combination and covariance, not raw pooled-window
 ↪ hazard means. The simulation's ratio-of-totals calculation is not a
 ↪ replacement estimator. $\text{delta} = \text{mean}(\beta_{0:5}) - \text{mean}(\beta_{-6:-1})$;
 ↪ $\text{delta_plac} = \text{mean}(\beta_{-12:-7}) - \text{mean}(\beta_{-18:-13})$. Estimate SE =
 ↪ $\sqrt{c' V_{CR1} c}$ and the registered two-sided Wald p and 95% CI.
 ↪ Missing/unidentified bins needed for a contrast are a nonestimability
 ↪ boundary; do not average only available bins. Raw binned hazards are
 ↪ separate descriptive outputs. Exact source-silent implementation
 ↪ choices remain in the pre-data gate ledger.

Source-preserved E5

id: E5

tier: exploratory

****estimand**:** Benefit-state decomposition: each risk-set person-month
 ↳ classified at month start as registered unemployment/activation
 ↳ versus other non-employment using PTI_TILSTAND_KODE spells with
 ↳ PTI_VFRA/PTI_VTIL (HKV Publicly maintained persons, valid from 01-01-
 ↳ 2007); state-specific delta_main contrasts and their difference - the
 ↳ direct empirical audit of the benefit-exhaustion/activation-clock
 ↳ confound otherwise handled by the arm-T netting argument.

****primary quantity**:** delta_main(UI/activation state) and
 ↳ delta_main(other non-employment) with person-clustered SEs and their
 ↳ Wald difference; E5 is the audit family's single test (uncorrected);
 ↳ E7 appears with the audit analyses in presentation only.
Execution detail

Source locators: prereg.yaml E5, preprocessing[PTI], missing_data_rule
 ↳ and multiple_comparisons; execution plan S12/T9. Classify month-start
 ↳ risk-set person-months using PTI_TILSTAND_KODE and PTI_VFRA<=first-of-
 ↳ -month<=PTI_VTIL: registered unemployment/activation versus other
 ↳ non-employment. No covering spell means other only after source compl
 ↳ eteness and linkage are established. Do not treat a missing table as
 ↳ absence of a spell. Exact historical code list and overlap-resolution
 ↳ table are not supplied; the plan asserts an analysis-script UI/activa
 ↳ tion priority rule that neither skeleton implements (U13). Current OF
 ↳ documentation records a July-2017 code change to 5025; this is a
 ↳ locator for the required vintage mapping, not a complete code list.

Estimate each state's source H1-style contrast and their difference with
 ↳ joint person covariance. E5 is explicitly the single audit test,
 ↳ uncorrected, in the final YAML E5 primary_quantity. E7 is presented
 ↳ beside it only; E7's correction remains in schedule family. Do not
 ↳ resurrect the audit report's stale allegation of an operative {E5,E7}
 ↳ family.

Outputs atom-000008/benefit-audit.csv (T9; UI_activation delta, other
 ↳ delta, between_state difference; estimate,se,95% CI,p_raw for the
 ↳ single difference,status,reason); state-composition.csv (month-start
 ↳ class, source code-map version, permissible counts/shares). No new
 ↳ confirmatory subgroup or causal-benefit mechanism is introduced. The
 ↳ source does not set a decisive magnitude or diagnostic significance
 ↳ gate here, so local reported means evidence present, not
 ↳ benefit-clock confounding demonstrated or excluded.

Reproducibility and disclosure

Future governed execution records input metadata/vintages, transformation
 ↳ s, row-count reconciliation, software and seed (execution plan
 ↳ specifies 20260818), estimator/contrast definitions, exclusions,
 ↳ activation traces, component statuses and archive timestamps. All
 ↳ rows remain inside the governed environment. Only cleared aggregate
 ↳ outputs feed figures; source thresholds are >=5 persons, additionally
 ↳ >=3 workplaces and no workplace >75% for workplace/industry
 ↳ tabulations. No invented disclosure aggregation algorithm: the source
 ↳ promises collapse to other/adjacent-bin presentation, but exact
 ↳ collapse precedence remains a pre-data gate where consequential. No
 ↳ microdata, model fits, simulations, or newly observed estimates are
 ↳ produced in this conversion. Synthetic plotting-interface checks are
 ↳ permitted outside the World and must never populate manuscript slots.

Does the source job-finding contrast differ between registered unemployment or activation and other non-employment?

Prospective source-protocol conversion. All empirical results are unfilled. Registration payload above is authoritative. Compatibility ratings are administrative placeholders, not scientific novelty, power, feasibility or evidence judgments. See [prereg/replication/conversion-audit.md](#).

Reference implementation

Entry point and supported/unresolved components for `atom-000008`: [execution index](#). See [engineering review](#). This pointer does not amend the registered protocol.