

Fiscal Event Geometry and the Two-Axis Fiscal Framework:

A Coordinated Approach to Institutional Tension

Author: Jim Yongzhi Huang, CPA, TEP, LL.M (Tax Law), MBA

Affiliation: CrossLab Institute, Canada

1. Why a New Coordinate Framework for Institutions?

Most empirical work on inequality, education, taxation, or migration treats institutions as background context. Tax codes, school-boundary rules, immigration regimes, trust regulations and inheritance law appear as legal scenery: they are noted, sometimes summarized, and then pushed to the margins so that regression models can proceed with familiar units—households, test scores, incomes, demographic indicators.

In practice, however, people do not encounter “the tax system” or “the education system” as abstractions. They encounter discrete events: a reassessment letter, a residence audit, an eligibility check for a school district, a delayed inheritance distribution, a migration status change. Each of these events is triggered by rule-based interactions between public capital and private capital. Each leaves an administrative trace, even if that trace is siloed in different agencies and jurisdictions.

This white paper proposes a coordinated way to think about these events and the systems that generate them. I bring together three strands of work:

1. **The Two-Axis Fiscal Framework** – a coordinate representation of fiscal position in terms of cross-jurisdictional public capital and intergenerational private capacity.
2. **Institutional Tension Analysis** – a way of describing how rules and resources pull against each other at specific points in that coordinate space.
3. **Fiscal Event Geometry** – a method for treating rule-triggered events as points, paths and clusters in the Two-Axis space, turning institutional behavior into observable geometry.

Huang_2025_Fiscal_Event_Geometr...

Taken together, these elements do not offer a new story about a particular policy. They offer a common coordinate language for describing how tax, migration, education and intergenerational wealth systems jointly generate observable events. The aim is not to replace existing econometric tools, but to give them a more coherent fiscal state space to operate in.

2. The Two-Axis Fiscal Framework

The starting point is deliberately simple. Instead of defining inequality or opportunity through sector-specific indicators, the Two-Axis framework asks:

- **Where does a unit sit in relation to public capital?**

- **What is its carrying capacity in private capital across generations, after tax?**

To answer these questions, I define a two-dimensional fiscal space:

- The **X-axis** represents cross-jurisdictional fiscal position in **pre-tax public capital**. This includes tax residence, treaty networks, eligibility for public education and healthcare, and other rule-bound access to publicly funded goods. Moving along X means moving across fiscal borders—between countries, provinces, school districts or benefit regimes—while tracking how rules structure access to public capital.
- The **Y-axis** represents **intergenerational carrying capacity of post-tax private capital**. It captures the ability of a household or family to sustain and transfer resources—through savings, gifts, inheritances, trusts, corporate structures, and other vehicles—after tax has already done its work.

A household, trust, or family office can therefore be represented as a point (X, Y) in this fiscal space. The position is not a moral ranking; it is a state variable. What matters is not only where a point is at a given moment, but how points move when rules fire.

This basic coordinate system has several consequences:

- It provides a **common state space** for phenomena that are usually analyzed separately—tax enforcement, migration decisions, school-boundary strategies, trust planning, philanthropic design.
- It treats **public capital and private capital as interacting coordinates**, not as separate “sectors.”
- It allows researchers to talk about **paths, trajectories and clusters** in the same space, rather than stitching together unrelated indicators.

In this sense, the Two-Axis framework is not a model of one policy problem; it is a map on which many fiscal policies can be plotted and compared.

3. Institutional Tension as a State-Dependent Relation

Once we have a coordinate space, the next question is: **what does it mean for institutions to be “under tension”?**

In everyday language, tension appears when rules and resources pull in different directions. A family may be formally eligible for a public program but lack the post-tax capacity to navigate it. A cross-border trust may be legal under one jurisdiction’s tax law but structurally exposed under another’s anti-avoidance rules. A school boundary may look neutral on a map but channel post-tax housing and tuition decisions into narrow corridors.

Within the Two-Axis framework, I use **institutional tension** to describe situations where:

- A unit’s (X, Y) position is **legal but fragile**, because small changes in rules or enforcement produce large changes in effective access or carrying capacity.

- Rules across jurisdictions **do not align**, creating stress points where households are forced into complex maneuvers simply to maintain stability.
- Administrative practices (such as audits, verifications, or eligibility checks) are **intensely concentrated** in particular regions of the X–Y space, even when formal law is written to be general.

Institutional tension is not a scalar number in this white paper. It is a way to talk about **how tightly coupled rules and capital flows are at specific regions of the coordinate space**. In later technical work, this intuition can be formalized into indices or estimators, but the conceptual core is straightforward:

Where rules multiply constraints relative to available private capacity, institutional tension is high.

Where rules distribute constraints proportionally to capacity, institutional tension is lower.

By anchoring tension in a shared X–Y coordinate space, the framework makes it possible to compare:

- Different tax regimes’ treatment of similar families,
- Different school systems’ treatment of similar post-tax capital profiles,
- Different migration and residence rules’ impact on cross-border households and family offices.

Institutional tension, in other words, becomes a **state-dependent property of the fiscal geometry itself**, not just a metaphor.

Time-Indexed Parameter Calibration

Although the geometry of the X–Y framework remains stable—the X-axis representing cross-jurisdictional positions in pre-tax public capital and the Y-axis representing the intergenerational carrying capacity of post-tax private capital—its applied parameters cannot be treated as static. ITI analysis depends on annually shifting policy signals, regulatory updates, and both global and domestic data conditions associated with a given fiscal domain. For this reason, the effective positions along the X and Y axes require periodic adjustment.

In this white paper, only the conceptual geometry is presented. The specific calibration procedures, weighting structures, and time-varying sensitivity functions used in applied or commercial settings are not detailed here.

4. Fiscal Event Geometry: Events as Points in a State Space

If the Two-Axis framework is the map, and institutional tension is a way of describing pressure at different locations on that map, then **Fiscal Event Geometry** explains how the map fills with points.

The premise is simple:

- Fiscal systems—tax, migration, education, trust and inheritance regimes—**generate discrete events**: tax filings, reassessments, residence changes, visa renewals, school-boundary checks, trust distributions, inheritance triggers, and so on.
- Each time such an event occurs, it updates a unit's position in the X–Y space.

Huang_2025_Fiscal_Event_Geometr...

Formally, we can think of:

- A rule set R containing tax, migration, education and trust rules,
- A population N , and
- An initial distribution F_0 of positions over the X–Y space,

which together generate a sequence of events $\{E_{it}\}$, where i indexes units (e.g., households, entities) and t indexes time. Each event leads to a new coordinate (X_{it}, Y_{it}) .

When we plot all these post-event positions across the population and across time, we obtain a **cloud of points in the X–Y plane**. This cloud is not random. Its shape reflects:

- **Clusters**: where certain rule–capital interactions repeat frequently (for example, mid-income households in boundary-adjacent neighborhoods subject to repeated address verification).
- **Density gradients**: where institutional bottlenecks or funnels appear (for example, narrow corridors through which cross-border capital must pass to remain compliant).
- **Trajectories**: the paths that specific units trace as they move across jurisdictions and generations, sometimes smoothly, sometimes via abrupt jumps after audits, legal changes, or structural transactions.

This is what I refer to as **Fiscal Event Geometry**: the study of how rule-triggered events generate observable geometry in the Two-Axis space.

Once events are represented as points and paths, familiar tools from econometrics and data science can be used in a more coherent way:

- Panel models can be interpreted as estimators over **paths in state space**, rather than over disconnected covariates.
- Event-study and difference-in-differences designs can be re-framed in terms of **shocks that alter the geometry**—changing densities, opening or closing corridors, shifting clusters.
- Synthetic control methods can be used not only to match outcome paths, but to match **entire regions of the X–Y state space** under different rule sets.

The goal is not to turn every social-science question into a geometry exercise, but to make visible the underlying structure that rules impose on fiscal life.

5. A Research Program, Not Just a Diagram

Taken together, the Two-Axis framework, institutional tension analysis, and Fiscal Event Geometry define more than a conceptual sketch. They outline a **research program** with multiple layers:

1. **Conceptual layer**

- Clarify the definitions of pre-tax public capital and post-tax private capacity.
- Document how specific legal rules—tax residence tests, school-boundary criteria, trust regulations—map into X–Y positions and transitions.

2. **Measurement layer**

- Develop indicators for institutional tension in specific regions of the space, reflecting how tightly rules bind relative to post-tax capacity.
- Encode administrative events as standardized points, enabling cross-dataset and cross-jurisdiction comparison.

3. **Geometric/econometric layer**

- Model how events populate the X–Y space under different rule sets, using simulation and empirical data.
- Identify structural breaks, clusters and high-tension zones, with an eye toward index construction and comparative analysis.

4. **Applied layer**

- Use the framework to study concrete questions:
 - How do cross-border school admissions practices interact with migration and tax rules?
 - How do family offices and trusts trace trajectories through the X–Y space as they balance compliance, privacy and intergenerational goals?
 - How do changes in enforcement practices reshape the geometry of everyday fiscal life?

Each of these layers can support multiple dissertations, articles or monographs. In this white paper, my aim is more modest: to make the structural connection visible. The same coordinate space that organizes the Two-Axis framework also underlies institutional tension and Fiscal Event Geometry. They are not separate ideas; they are different faces of the same analytic construction.

6. Communication Without Self-Declaration

A practical difficulty in introducing any new framework is rhetorical. It is neither accurate nor productive for an author to declare that a “new paradigm” has been created. Paradigms are recognized in hindsight, not proclaimed in advance. Yet it is equally unhelpful to describe genuinely new structures as if they were minor variations on existing models.

The approach I take here is intentionally modest in language and ambitious in structure:

- I do not claim that the Two-Axis framework replaces existing theories of inequality or education. I claim that it **offers a shared fiscal state space** on which many existing approaches can be re-plotted.

- I do not claim that institutional tension or Fiscal Event Geometry are final answers. I claim that they **show how rules, capital and events can be represented in a coherent coordinate language**, suitable for future econometric and qualitative work.
- I do not claim ownership over every application. I claim responsibility for articulating the basic geometry and for clarifying how it can be used.

This is why short white papers, concept notes and working papers on open platforms such as SSRN and Zenodo are central to the project. They allow the framework to be:

- **Publicly visible**, without waiting for lengthy review cycles,
- **Precisely documented**, so that future researchers can build on or contest it, and
- **Internally coherent**, with each piece referring back to a common coordinate architecture.

7. Conclusion: From Rules to Geometry

Tax law, migration regimes, education systems and intergenerational wealth structures are often treated as separate domains, each with its own discourse and methods. Yet for households, families and institutions, these systems are experienced together, as intertwined constraints and opportunities that unfold over time.

By:

- Mapping cross-jurisdictional public capital and intergenerational private capacity onto a **Two-Axis fiscal space**,
- Describing **institutional tension** as a state-dependent property of that space, and
- Representing rule-triggered events as points and trajectories in **Fiscal Event Geometry**,

I aim to provide a coordinate-based language for studying institutions as **state spaces rather than as static backgrounds**.

This white paper does not exhaust the framework. It is an invitation: to see fiscal life not only as a sequence of narratives and case studies, but as a geometry generated by rules and capital moving through time. The details—including formal estimators, weighting schemes and index constructions—belong in technical working papers. Here, the task is simpler and more fundamental: to show that these three pieces fit together, and that together they open a coherent, original way of seeing.