



AI and Systemic Risks: Macro-economic Systemic Risk Pathways

How Poor Fiscal Choices Can Amplify AI-Driven Instability: AI Fiscal Derailment

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SUMMARY

Artificial intelligence (AI) is transforming productivity, labour markets, and capital formation at unprecedented speed. While these changes promise long-term growth, **poor macroeconomic fiscal policy choices** risk turning AI from a productivity engine into a source of **national and regional systemic instability**.

This note expands on the recent ASRA note “**AI and systemic risks**” examines how **misaligned fiscal responses**—particularly reactive taxation, unstable policy signalling, and underinvestment in social and physical resilience—can create **self-reinforcing feedback loops** linking:

- AI-driven labour disruption
- Fiscal stress and sovereign funding costs
- Wealth inequality and social trust
- Political legitimacy and geopolitical stability

As with other systemic risks, it is not any single policy error that creates failure, but the **interaction between systems** that magnifies shocks and narrows policy options over time.

Introduction

Artificial intelligence should not be treated as a discrete “technology shock” to be absorbed by existing fiscal frameworks. Instead, it functions as a **fiscal stress multiplier**, amplifying pre-existing weaknesses in tax bases, expenditure structures, and policy credibility. The risk does not arise from any single channel, but from the *interaction* of multiple pressures operating simultaneously and at speed.

1. Erosion of labour-based tax revenues

AI-driven automation disproportionately affects **mid- and high-productivity labour**, precisely the segments that anchor modern progressive tax systems.

- **Income tax and social contribution erosion**
Displacement or compression of professional, managerial, and technical roles reduces employee income taxation, national insurance, and employer contributions. Unlike historical automation waves, AI directly substitutes cognitive labour that previously scaled tax capacity with productivity growth.
- **Wage polarisation and base thinning**
AI tends to generate a bifurcation: high returns to a narrow set of capital-complementary skills and ownership, alongside a widening mass of lower-wage or precarious employment. This weakens the effective progressivity of the tax system even if statutory rates remain unchanged.
- **Decoupling of productivity and taxable income**
Aggregate productivity may rise while the labour share of income falls. Fiscal frameworks implicitly assume a stable mapping between growth and labour-tax receipts; AI breaks this assumption.

2. Rising and more volatile social expenditure needs

At the same time as labour-based revenues weaken, **expenditure pressures become more structural rather than cyclical**.

- **Income stabilisation and transition support**
Governments face sustained demand for income support, retraining, and job-transition programmes, particularly in regions exposed to sectoral automation. These are not one-off costs but multi-year fiscal commitments.
- **Higher fiscal convexity during transitions**
Adjustment costs are front-loaded, while any offsetting gains (higher productivity, new sectors) are uncertain, delayed, and unevenly distributed. This raises the probability of fiscal stress precisely when political tolerance for consolidation is lowest.

- **Risk of policy entrenchment**

Temporary support measures, once introduced, are politically difficult to unwind—embedding higher baseline expenditure even if AI-related disruption stabilises.

3. Heightened sensitivity to capital mobility and expectations

AI intensifies the elasticity of the tax base with respect to policy credibility.

- **Footloose capital and human capital**

AI-intensive firms, founders, and key personnel are unusually responsive to regulatory uncertainty, tax volatility, and ex post policy changes. The option value of relocation is high, and execution costs are low.

- **Expectations-driven tax base loss**

Even the *anticipation* of poorly designed fiscal responses—windfall taxes, ad hoc levies, retroactive measures—can suppress investment, IP location, and balance-sheet anchoring before revenues ever materialise.

- **Path dependence in future tax capacity**

Early policy errors can permanently shrink the future capital and profit tax base, compounding long-run fiscal fragility.

Systemic interaction and non-linearity

Each of these pressures might be manageable in isolation. The systemic risk emerges when they interact:

- Declining labour revenues increase deficits.
- Deficits raise pressure for short-term, reactive taxation.
- Reactive taxation undermines capital confidence.
- Capital flight further erodes the tax base.
- Fiscal stress intensifies, feeding back into policy instability.

This feedback loop transforms AI from a productivity opportunity into a **self-reinforcing fiscal derailment risk**.

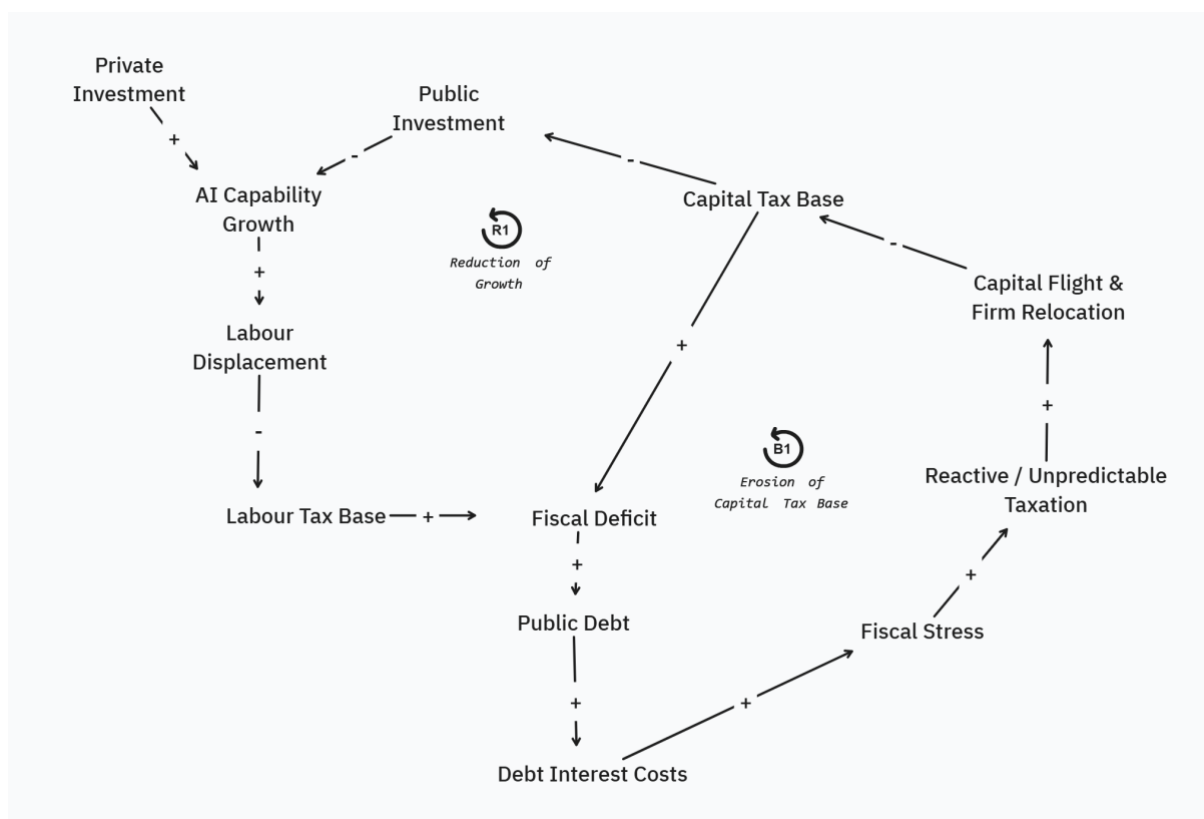
Core policy implication

The central danger is not AI itself, but **short-horizon fiscal responses applied to a long-horizon structural transition**. Traditional counter-cyclical tools—temporary tax changes, narrow base-expanding measures, or politically expedient levies—become destabilising when applied to an economy where value creation is increasingly intangible, mobile, and expectations-driven.

Managing AI-era fiscal risk therefore requires:

- Predictable, broad-based fiscal frameworks,
- Forward-looking treatment of capital formation and ownership,
- And explicit recognition that fiscal credibility is now a first-order macroeconomic variable, not a residual.

Without this shift, AI does not merely strain public finances—it **accelerates existing fiscal vulnerabilities into systemic instability**.



High-Risk Fiscal Response Pathways

The principal fiscal danger in an AI-intensive economy does not arise from exogenous shocks alone, but from **policy reactions that are locally rational yet systemically destabilising**. When governments respond to emerging fiscal gaps using instruments

designed for slower, less mobile economies, they risk triggering non-linear feedback loops that degrade both fiscal capacity and governance quality.

2.1 Reactive taxation and credibility loss

Under conditions of rising deficits or unexpected revenue shortfalls, governments frequently resort to short-term fiscal instruments such as:

- One-off or “exceptional” levies,
- Ad hoc wealth or capital taxes,
- Retrospective or quasi-retrospective policy changes.

While these measures may appear fiscally efficient *ex ante*—particularly when targeted at concentrated or politically salient bases—they impose **disproportionate costs on policy credibility** in an AI-driven economy.

Mechanism of instability

AI-intensive firms and asset owners exhibit unusually high sensitivity to fiscal expectations:

- **Low relocation and restructuring frictions**
Intangible assets, IP, and senior human capital can be redeployed rapidly across jurisdictions.
- **Expectations-driven behaviour**
The threat of future reactive taxation can deter investment and location decisions even before policies are enacted.
- **Non-linear responses**
Small increases in perceived arbitrariness or policy risk can trigger large shifts in capital allocation.

As a result, reactive taxation risks:

- Accelerating firm and IP relocation,
- Reducing long-run capital formation,
- Increasing the sovereign risk premium through weakened growth and tax-base expectations,
- Raising long-term debt-service costs via higher required yields on public debt.

Systemic feedback

The fiscal consequences are self-reinforcing:

1. Higher borrowing costs worsen fiscal balances.

2. Worsening balances increase political pressure for rapid revenue-raising measures.
3. Further reactive taxation undermines credibility and capital confidence.
4. The tax base shrinks further, intensifying fiscal stress.

This loop transforms what begins as a revenue-stabilisation effort into a **credibility-driven fiscal spiral**, in which policy volatility becomes an endogenous driver of sovereign risk.

2.2 Fiscal stress → inequality → political instability

AI-driven productivity gains are intrinsically **uneven in their distribution**, favouring capital ownership, scale, and skill complementarities. In the absence of effective fiscal and institutional counterweights, this unevenness propagates into broader macro-political risk.

Distributional transmission channel

If fiscal policy fails to:

- Redistribute opportunity rather than only income,
- Support labour transitions at scale,
- Invest in public productivity (infrastructure, skills, institutional capacity),

then rising productivity does not translate into broad-based welfare gains. Instead, inequality increases not merely in income terms, but in **economic security, regional prospects, and political voice**.

Political-economy amplification

As inequality rises:

- Trust in institutions erodes, particularly where adjustment costs are visible and concentrated,
- Democratic legitimacy weakens as large segments of the population perceive limited participation in growth,
- Governance quality declines, with greater susceptibility to populism, policy volatility, and short-termism.

These dynamics impose **direct fiscal costs**—through policy reversals, underinvestment, and higher risk premia—and **indirect economic costs** by reducing the state's capacity to implement credible, long-horizon policy.

Systemic interaction with fiscal stress

This pathway mirrors the reinforcing loops identified in broader AI risk mappings:

- Economic disruption increases inequality,
- Inequality undermines governance and institutional trust,
- Weaker governance reduces fiscal and regulatory effectiveness,
- Reduced effectiveness amplifies economic and fiscal risk.

The result is a **compound instability**, where fiscal stress and political fragility co-evolve, each amplifying the other.

Synthesis

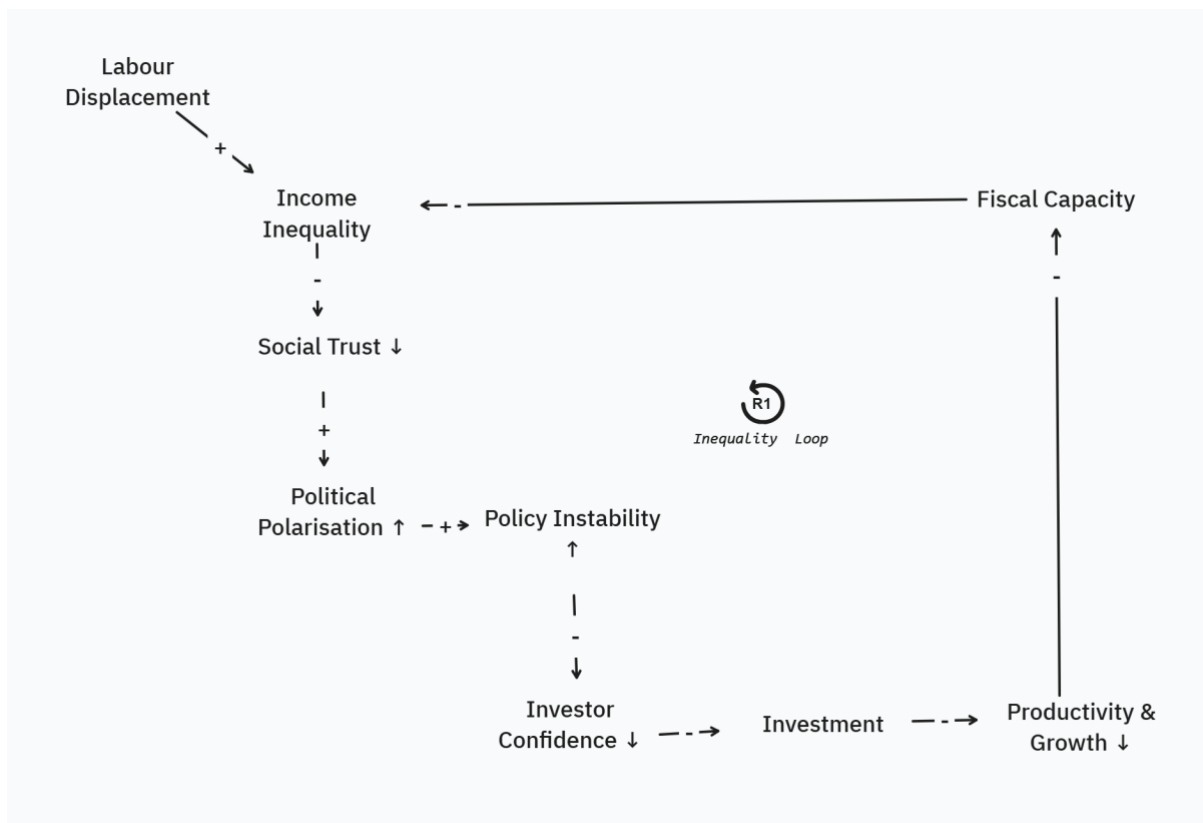
The critical insight is that **fiscal stress, inequality, and governance quality are no longer separable domains** in an AI-intensive economy. Reactive fiscal measures and weak distributional frameworks do not merely fail to solve underlying problems—they actively accelerate systemic risk by destabilising expectations, capital allocation, and political legitimacy simultaneously.

Avoiding these high-risk pathways requires fiscal strategies that prioritise:

- Predictability over opportunism,
- Long-horizon credibility over short-term revenue extraction,
- And institutional resilience as a core component of macro-fiscal sustainability.

Absent such a shift, fiscal policy itself becomes a primary transmission mechanism for AI-era systemic risk.

Mapping systemic AI risks



2.3 Underinvestment in adaptation and resilience

A further high-risk fiscal pathway arises not from *active* policy error, but from **systematic underinvestment in adaptation and resilience** during periods of apparent fiscal constraint. In an AI-intensive economy, this form of omission risk becomes increasingly dangerous because it converts manageable, incremental costs into **large, correlated fiscal shocks**.

The nature of hidden liabilities

Failure to invest adequately in:

- **Physical climate adaptation**
(flood defences, heat resilience, water systems, transport robustness),
- **Energy and compute infrastructure**
(grid capacity, storage, low-volatility power supply, data and compute resilience),
- **Workforce transition systems**
(continuous retraining, mobility support, institutional labour-market infrastructure),

does not eliminate costs—it **defers and compounds them**.

From a fiscal perspective, these omissions create *implicit contingent liabilities* that remain off-balance-sheet until triggered by external or endogenous shocks. Unlike explicit public debt, these liabilities are:

- Poorly priced by markets ex ante,
- Politically invisible during budget cycles,
- And highly correlated across sectors when they materialise.

Timing asymmetry and fiscal convexity

A key risk is **temporal mismatch**:

- Adaptation and resilience investments require upfront fiscal effort during periods of relative stability.
- The fiscal benefits are realised only by *avoiding* future losses—making them politically undervalued.
- When shocks occur, they do so **precisely when fiscal headroom is weakest**.

In an AI-driven economy, this timing problem is exacerbated because:

- Labour markets are already volatile due to automation and task reallocation,
- Revenue bases are thinner and more elastic,
- And fiscal buffers are more likely to be depleted by prior reactive responses.

The result is high fiscal convexity: modest increases in shock severity lead to disproportionately large increases in borrowing needs.

Interaction with AI-driven labour volatility

Underinvestment in workforce transition systems interacts directly with AI-induced disruption:

- Labour displacement becomes more persistent rather than transitory,
- Human capital depreciation accelerates,
- And re-entry into productive employment slows.

This increases reliance on income support and emergency fiscal measures at the same time as revenues weaken. Importantly, these costs are not purely social—they translate into **lower long-run potential output**, permanently reducing the future tax base.

Sovereign funding implications

When deferred liabilities materialise, they tend to do so in clusters:

- Climate events damage physical capital and productivity,
- Energy and compute bottlenecks constrain AI-enabled growth,
- Labour dislocation raises expenditure explained as “temporary” but becomes structural.

Markets respond not only to higher deficits, but to the **revealed absence of a credible long-term investment strategy**. This can:

- Increase term premia on sovereign debt,
- Raise refinancing risk during stress periods,
- And reduce fiscal space exactly when countercyclical policy is most needed.

Systemic effect

The systemic danger is that underinvestment converts what should be **smooth, planned capital expenditure** into **disorderly crisis financing**. Instead of spreading costs across time and cohorts, governments are forced into emergency borrowing, policy reversals, or distortionary taxation—reinforcing the very fiscal instability they sought to avoid.

Core implication

In an AI-intensive economy, adaptation and resilience spending should be understood not as discretionary investment, but as **balance-sheet protection**. Failure to invest creates latent fiscal risks that:

- Materialise under the worst macro conditions,
- Interact destructively with AI-driven labour and revenue volatility,
- And amplify sovereign funding stress through credibility and risk-premium channels.

From a macro-fiscal perspective, underinvestment in resilience is therefore not a neutral choice—it is a **leveraged bet against future stability**, with asymmetric downside and limited political upside.

International Competition and Unstable Equilibria

AI deployment unfolds within a **strategically interdependent global system**, not within the closed-economy frameworks implicit in much fiscal policy design. The relevant dynamics are closer to repeated games with asymmetric adjustment costs and strong first-mover advantages, in which policy errors can shift economies toward **low-growth, high-instability equilibria** that are difficult to escape.

Competitive constraints on national policy

Three structural features define the international AI environment:

- **Inability to unilaterally slow adoption**
No major economy can meaningfully decelerate AI development or diffusion without incurring large relative productivity losses. Any attempt to do so is rapidly arbitrated away through trade, capital flows, and offshoring of AI-intensive activity.
- **Non-cooperative investment dynamics**
Private capital, particularly in AI infrastructure and intangible assets, cannot credibly self-limit when competitors continue to scale. This creates a dynamic akin to a technology arms race, even in the absence of explicit geopolitical rivalry.
- **Frontier dependence and path dependence**
Falling meaningfully behind the AI frontier risks persistent losses in productivity, tax capacity, and strategic autonomy. Catch-up costs rise non-linearly once ecosystem effects—talent clustering, data accumulation, compute scale—are lost.

Together, these forces constrain national fiscal and regulatory discretion: governments must design policy **under competitive pressure**, not in a setting where time and adjustment can be optimised unilaterally.

Fiscal policy as an equilibrium-selection mechanism

In this environment, fiscal policy plays a critical role in determining which equilibrium an economy converges toward.

Poorly designed fiscal responses—characterised by volatility, short-termism, or ex post redistribution without growth anchoring—can shift the economy toward an **unstable equilibrium** marked by:

- **Low private investment**, as uncertainty and weak infrastructure deter long-horizon commitments,
- **High social stress**, as labour displacement outpaces institutional adaptation,

- **Rising geopolitical risk**, as economic fragility weakens strategic resilience and international bargaining power.

Once entered, such equilibria are self-reinforcing. Lower investment reduces productivity growth, shrinking fiscal capacity and increasing reliance on distortionary or reactive policy tools. Social stress, in turn, constrains the political space for credible long-term reform.

Political and geopolitical spillovers

The macroeconomic consequences of unstable equilibria extend beyond growth and public finance:

- **Social unrest and polarisation**
Uneven AI gains combined with weak fiscal adaptation increase the probability of protest, political fragmentation, and episodic instability.
- **Nationalist and inward-looking policy shifts**
Governments under fiscal and social pressure may adopt protectionist or nationalist policies that further deter investment and erode international cooperation.
- **Heightened international conflict risk**
Economic stagnation and technological insecurity raise incentives for external conflict or coercive trade and technology policies, especially where AI is perceived as a strategic asset.

These spillovers feed back into economic outcomes through higher risk premia, disrupted trade, and reduced cross-border capital flows.

Systemic implication

The core insight is that **international competition in AI compresses the margin for fiscal error**. In a globally competitive, frontier-driven environment, domestic fiscal missteps do not merely reduce welfare at the margin—they can **reselect the economy into a fundamentally worse equilibrium**.

Avoiding this outcome requires fiscal frameworks that:

- Stabilise expectations rather than amplify uncertainty,
- Support investment in frontier-adjacent capabilities,
- And distribute transition costs in ways that preserve social cohesion.

Absent such frameworks, AI-driven international competition transforms fiscal policy from a stabilising instrument into a potential trigger for **persistent economic, social, and geopolitical instability**.

4. Systemic risk pathways: summary

The core systemic risk associated with AI can be understood not as a single shock, but as a **cumulative, feedback-driven pathway** in which economic, fiscal, and political dynamics reinforce one another over time. The sequence below captures the dominant mechanism through which AI transitions can translate into macro-instability if poorly managed.

(i) **AI-driven labour disruption**

AI adoption alters task composition across sectors, disproportionately affecting mid- and high-productivity roles that historically anchor tax capacity. Labour displacement, wage compression, and employment volatility emerge faster than institutional adaptation, weakening the linkage between productivity growth and broad-based income formation.

(ii) **Emergence of fiscal gaps**

As labour-based tax receipts erode and transition-related expenditures rise, fiscal balances deteriorate. Importantly, these gaps are **structural rather than cyclical**: they persist even during periods of aggregate growth, undermining the effectiveness of traditional counter-cyclical policy tools.

(iii) **Reactive taxation as a short-horizon response**

Political pressure to close visible fiscal gaps encourages reliance on:

- One-off or narrowly targeted levies,
- Ad hoc wealth or capital taxation,
- Retrospective or unstable policy changes.

While locally rational, these measures degrade policy credibility in an economy where capital, IP, and senior human capital are highly mobile.

(iv) **Capital flight and investment suppression**

In response to perceived fiscal arbitrariness or future tax risk:

- Firms delay or relocate investment,
- Intangible assets and IP are re-domiciled,
- High-value individuals increase geographic diversification.

The tax base contracts further, often in anticipation rather than reaction to enacted policy.

(v) Rising debt costs and sovereign risk premia

Markets internalise the interaction of weaker growth, shrinking tax capacity, and policy volatility by demanding higher risk premia on sovereign debt. Debt-service costs rise, crowding out productive public investment and narrowing fiscal space.

(vi) Rising inequality and social stress

Higher borrowing costs and reduced fiscal space limit the state's ability to:

- Support labour transitions,
- Invest in public productivity,
- Smooth distributional outcomes.

AI-driven gains accrue narrowly, while adjustment costs are broadly borne, intensifying inequality in income, opportunity, and regional outcomes.

(vii) Political instability and legitimacy erosion

As inequality and perceived unfairness rise:

- Trust in institutions weakens,
- Political polarisation increases,
- Policy horizons shorten.

Governments become more reactive and less capable of committing credibly to long-term strategies.

(viii) Reduced governance capacity

Eroded legitimacy and institutional fragility impair the state's ability to design, implement, and sustain coherent fiscal and regulatory frameworks. This further increases policy uncertainty and reduces investor confidence.

(ix) Feedback into deeper fiscal stress

Weakened governance capacity feeds directly back into fiscal outcomes:

- Policy volatility accelerates tax-base erosion,
- Investment falls further,
- Debt costs remain elevated or rise.

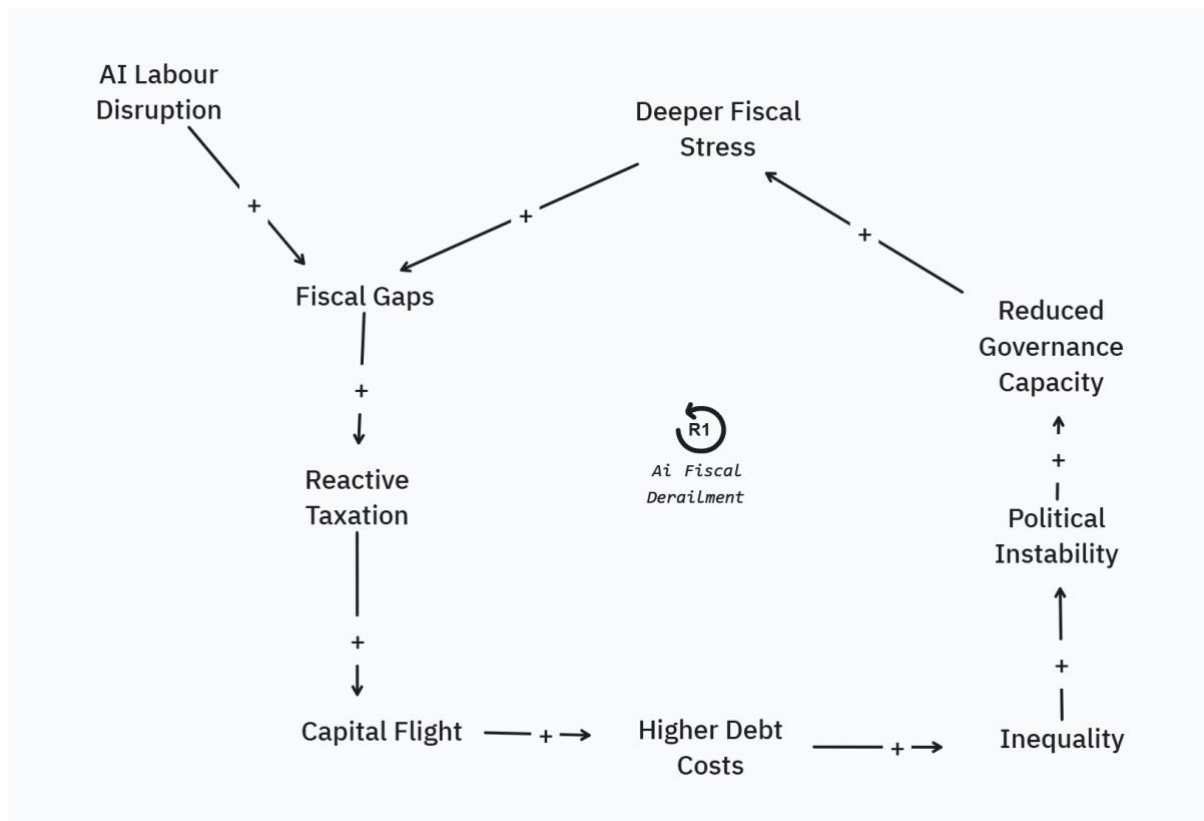
The system enters a **self-reinforcing loop** in which fiscal stress becomes endogenous to the policy and governance environment itself.

Summary : Systemic insight

The critical feature of this pathway is **non-linearity**. Each step amplifies the next, and once multiple links are active simultaneously, reversal becomes increasingly costly and politically constrained. AI compresses timelines and increases elasticities, meaning that transitions from stability to stress can occur rapidly and with limited warning.

Breaking this pathway requires intervention **upstream**—before fiscal gaps are met with reactive tools and before credibility is impaired. Once the loop is fully engaged, traditional fiscal consolidation or redistribution measures are unlikely to restore stability without substantial economic and social cost.

In this sense, the dominant AI–fiscal risk pathway is not merely a descriptive sequence—it is a **warning map**. It highlights where policy must act pre-emptively if AI is to be integrated as a source of durable prosperity rather than a catalyst for systemic instability.



Once established, this loop is difficult and expensive to break.

Conclusion: why fiscal policy is a first-order AI risk

AI should not be analysed solely through the lenses of technology, productivity, or sectoral disruption. It represents a **first-order macro-fiscal and societal stability risk**,

because it reshapes the foundations on which modern fiscal states are built: labour-based taxation, predictable growth-revenue linkages, and politically sustainable redistribution.

In contrast to previous technological transitions, AI simultaneously:

- Weakens traditional tax bases,
- Increases the elasticity of capital and high-value activity to policy credibility,
- Raises the scale and persistence of transition-related expenditure,
- And compresses adjustment timelines through rapid diffusion and global competition.

These effects interact with pre-existing fiscal vulnerabilities—high debt levels, ageing populations, underinvestment in public capital—such that **AI acts as an accelerant rather than a shock absorber**. The result is a system in which small policy errors can have large, non-linear consequences for fiscal sustainability and social cohesion.

Crucially, the risk is not that governments will “fail to tax AI” in a narrow sense, but that **incoherent or reactive fiscal responses** will undermine expectations, investment, and institutional legitimacy at precisely the moment when credibility is most valuable. In an AI-intensive economy, fiscal policy is no longer a passive redistributive mechanism; it becomes a central determinant of:

- Capital formation and location,
- Labour-market adjustment speed,
- Political stability and trust in institutions,
- And sovereign risk premia.

This reframes the policy problem. Traditional crisis-management approaches—temporary levies, emergency spending packages, discretionary redistribution—are ill-suited to a transition that is structural, continuous, and internationally competitive. By the time fiscal stress is visible in headline deficits or debt ratios, the underlying erosion of tax capacity and governance resilience may already be well advanced.

Preventing AI-driven systemic instability therefore requires **anticipatory fiscal design**:

- Frameworks that stabilise expectations over long horizons,
- Investment strategies that protect future tax capacity,
- And distributional mechanisms that preserve social legitimacy during transition.

In this sense, fiscal policy is not merely a response variable in the AI transition—it is one of the **primary control variables**. Whether AI becomes a source of sustained prosperity

or a trigger for systemic instability will depend less on the pace of technological change than on the quality, coherence, and credibility of fiscal policy choices made in advance of crisis conditions.

[1] (ASRA, 2025) Mapping systemic AI risks, “ASRA”, October 2025

URL: <https://steer.asranetwork.org/library?page=3>