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From Global Value Chains to Family Schoolbags: Risk Transfer Mechanisms and the Alienation of Education as a Safe-Haven Asset

Hongyu Zhou

Tianjin Foreign Languages School Affiliated to Tianjin Foreign Studies University, Tianjin, China
zhouhongyu081029@gmail.com

Abstract. Against the backdrop of profound restructuring of global value chains (GVCs) and post-industrial transformation, educational involution has evolved from a phenomenon confined to a single country into a shared structural dilemma for developing countries worldwide. Its core contradiction lies in the asynchronous imbalance between the intensity of educational competition and the level of economic development. This study constructs a three-tiered "push-squeeze-pressure" model: Low-end global division of labor forces countries to prioritize industrial investment, squeezing out spending on people's livelihoods and creating governance risks (push); inadequate social security and the concentration of educational resources lead to the transfer of risks to society, with education becoming a risk-hedging tool (squeeze); under survival pressure, families view educational investment as defensive savings, driving excessive competition and involution (pressure) . The study reveals that the root cause of educational involution lies in the interaction of global structural constraints, national governance strategies, and the alienation of social functions, rather than a single cultural or institutional factor. This finding breaks the myth that "educational problems can be solved through education," providing a new framework for interdisciplinary understanding of educational competition and helping to break the policy dilemma of "ineffective burden reduction."

Keywords: Global value chains, risk transfer mechanisms, alienation of education

1. Introduction

In an era of profound restructuring of global value chains and post-industrial transformation, educational involution has evolved from a phenomenon confined to individual countries into a common predicament for developing nations. Global educational competition exhibits distinct transnational heterogeneity. Emerging economies deeply integrated into global value chains (GVCs), such as China and South Korea, generally find their education systems trapped in an involutionary predicament of "high input, high competition, and low skill returns." This paradox of asynchronous development level and intensity of educational competition challenges mainstream cultural determinism based on "East Asian cultural characteristics" (such as the Confucian tradition of

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emphasizing education) and cannot be fully explained by educational policy research focusing solely on domestic examination systems or resource allocation.

Existing research mainly follows two paths: one is an internal educational perspective, focusing on curriculum, assessment, and policies to reduce academic burden, but often falls into a cycle of "policy failure" due to neglecting macro-structural constraints; the other is a sociological and economic perspective, analyzing the independent impacts of class reproduction, employment market signals, or family anxiety. However, both types of research generally lack an integrated theoretical framework that can systematically connect global economic structure, national governance strategies, social institutional functions, and micro-level family behavior. This study, based on GVC theory and combined with risk society theory and human capital theory, constructs a three-stage analytical framework of "push-squeeze-pressure," aiming to achieve three breakthroughs: theoretically, it restores educational involution to the result of systemic risk transfer, completing a cognitive upgrade from "internal educational problems" to "state-family interaction problems"; in terms of policy, it reveals the root causes of the ineffectiveness of local reforms, providing a systemic approach to breaking the risk transfer chain; practically, it provides a theoretical reference for the modernization of education in China and other countries locked in at the low end of GVC globally..

2. Literature review and theoretical foundation

Gereffi's theory of global value chain governance shows that the low-end lock-in of the GVC in developing countries constitutes the core exogenous constraint. The dependent division of labor determines that national fiscal resources will inevitably be tilted towards industrial capital, and social security and welfare investment will be continuously compressed. The state transforms the economic risks of industrial upgrading and the structural risks of global competition into welfare supply risks at the governance level, which is the logical starting point for risk transfer. A typical example is that China's upstream manufacturing index is 40% lower than that of Germany, and social security expenditure accounts for only 3.8% of GDP (24% in Germany). This limitation of fiscal redistribution capacity constitutes the deep institutional source of educational involution [1].

Beck's risk society theory posits that a core characteristic of modern society is the shift towards individualized risk—the risk-bearing subject shifts from the collective to the individual, and the defense mechanism changes from institutional safety nets to self-responsibility. An imperfect social security system essentially represents the failure of the collective risk-bearing mechanism, allowing the state to transfer risk to society, creating a double squeeze on families: on the one hand, the lack of social security makes the risks of employment, income, and social mobility "individually borne"; on the other hand, the concentration of high-quality educational resources makes them a scarce competitive asset. Education, therefore, is endowed with a distinct risk-hedging tool attribute, becoming the core intermediary for risk transfer. Meritocracy has become a low-cost governance tool for maintaining social mobility, while families view education as the only way to hedge against social fall.

Schultz's human capital theory is based on the classic theory of maximizing returns. When the risks of national governance are transferred to families through the absence of social security and the accumulation of resources, education investment is given the attribute of precautionary savings. The core marginal utility is no longer the increase of human capital, but the hedging against survival risks. This logical shift explains the vicious cycle of "the more you invest, the more anxious you become" - investment fails to reduce risk perception, but instead strengthens anxiety due to competition, forming a self-reinforcing involution loop [2].

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The internal reform theory of education attributes involution to rigid school evaluation systems and homogenized curriculum designs, with policy proposals focusing on adjusting enrollment policies and regulating after-school tutoring. Its fundamental limitation lies in the endogenous bias—treating education as an independent system while ignoring its dependence on the macroeconomic structure. "Burden reduction" policies, detached from GVC constraints and social security levels, ultimately suffer from implementation deviations because the risk aversion needs of families remain unaddressed. Formal training decreases while the hidden tutoring market expands, leading to increased costs.

Theories such as single-factor determinism, industrial structural imbalance, social security deficiencies, and family anxiety each offer only partial explanations and fail to establish a transmission chain from macro-structure to micro-behavior. This article systematically integrates these theories and proposes suggestions.

3. The three education-related safe-haven assets exhibit distorted performance

The core concept of this study is the alienation of education as a safe-haven asset, referring to the transformation of education's function from promoting holistic human development to becoming a tool for families to mitigate social risks. Specifically, this manifests in several ways: the value objective shifts from cultivating well-rounded individuals to acquiring academic credentials; behavioral logic shifts from proactive investment to passive defense; and the social function shifts from a public good to private competitive capital. The essence of this alienation is the functional shift of education from "nurturing people" to "risk aversion." Decreasing returns on investment cannot suppress investment impulses because its core value lies in risk hedging rather than human capital appreciation. This paper proposes a core argument: educational involution is a systemic result of the gradual transfer of "national governance risk" to "family survival risk" within the global value chain division of labor. To rigorously demonstrate this argument, this paper constructs a novel three-stage transmission model: "Push-Squeeze-Pressure."

3.1. First stage: macroscopic "thrust" mechanism

The structural constraints of low-end locking in GVC. Developing countries are overly embedded in the processing and assembly links, and the proportion of manufacturing is significantly higher than that of developed countries. This dependent position determines that national fiscal resources must prioritize industrial capital, and the economic risks of industrial upgrading and the structural risks of global competition are institutionally transformed into welfare supply risks. China's social security expenditure accounts for only 3.8% of GDP (24% in Germany), and this limitation of fiscal redistribution capacity is the fundamental institutional source of educational involution [3].

The logic behind the generation of national governance risks. Under the lock-in of low-end industries, the nation faces dual pressures: external supply chain squeeze and internal economic catch-up demands. This strategy forces the nation to shift development risks from public finances to society and families, maintaining industrial competitive advantage by reducing social security spending. This impetus has a long-term lag—industrial restructuring takes several years to transmit to the labor market and then affect family education expectations; therefore, even if the GVC (General Value Chain) status improves, the inertia of involution will continue.

The transmission path is characterized by GVC location - fiscal redistribution capacity - social security investment - household economic security expectations. This chain reveals why educational involution is not synchronized with economic development—the state prioritizes resources for

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industrial upgrading rather than people's welfare, forcing families to insure themselves through educational investment.

3.2. Second stage: mesoscopic "squeezing" mechanism

The institutional absence of a social security system. Risk society theory reveals that when collective risk-sharing mechanisms fail, the responsibility for risk mitigation becomes individualized. In developing countries, insufficient social security coverage leads to a shift in employment, healthcare, and old-age risks from "collective sharing" to "individual self-responsibility." Education is forced to assume the risk-hedging function that should be fulfilled by social welfare, becoming the only "safety valve" that families can control.

Capitalization of educational resources. Beijing, Shanghai, Guangzhou and Shenzhen concentrate 35% of the country's high-quality higher education resources, leading to the spillover effects of "capitalization of school district housing" and "college entrance examination migration" [4]. High-quality education is not only a learning opportunity, but also a ticket for social mobility. Its value is determined by the social stratification structure rather than education itself. This scarcity amplifies family investment anxiety and forms a vicious cycle of "resource competition - intensified involvement".

The systemic alienation of the function of education. Under dual pressure, the essence of education has shifted: its role in nurturing people has weakened, while its role as a tool has strengthened; the cultivation of all-round qualities has given way to test-taking skills training; meritocracy has become a low-cost governance tool, and families view education as the only means of maintaining their social class. Education has been alienated from public goods to a private safe-haven asset, and the state has successfully transferred the risk of welfare provision through institutional arrangements.

3.3. Third stage: microscopic "stress" mechanism

The shift in family decision-making logic. Risk transfer ends at the micro-family level. The decision-making logic shifts from "maximizing benefits" to "minimizing risks," which has three characteristics: preventive motivation (education such as insurance, the core of which is risk avoidance), social reference effect (decision-making depends on relative competitive status), and loss aversion drive (fear of falling into social class far outweighs desire for upward mobility) [5].

The rational paradox of defensive investment. Families continue to increase their investment in education despite knowing that the rate of return is declining, because its core utility lies in providing psychological security and risk hedging. This seemingly irrational behavior is actually the optimal response under institutional constraints—in the absence of social security and diversified mobility channels, excessive investment in education is the only self-insurance strategy.

Heterogeneous response and class differentiation. The elasticity of education investment of high-income families is significantly higher than that of low-income families, because they face greater "fall risk" and have stronger investment capacity. The essence of education involution is the class defense battle of the middle-income group. Low-income families are passively withdrawn due to financial constraints, which solidifies social inequality. After the "double reduction", 65% of families turned to hidden tutoring and the cost increased, which confirms that the risk transfer mechanism has not been broken and the supply-side regulation has instead increased the burden on families [6].

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Defensive investment leads to convergence in group behavior, increases the intensity of competition and educational thresholds, further reduces the rate of return, reinforces the anxiety of "falling behind if you don't invest," and forms a self-perpetuating cycle of "macro-constraints - meso-alienation - micro-response - intensified competition - reinforced constraints," thus making educational involution deeply rooted.

4. Policy implications

The root cause of the failure of existing policies lies in their focus solely on regulating the supply side of education, failing to address the risk transfer chain. Simply banning training cannot eliminate families' risk aversion needs; instead, it fosters a hidden market with higher prices and greater difficulty in regulation. A shift towards systemic governance is necessary, requiring a coordinated effort through industrial upgrading, improved social security, and optimized education to reconstruct the "state-market-family" risk-sharing mechanism, allowing education to return to its essential purpose of nurturing individuals.

4.1. Macroeconomic policy: breaking the GVC low-end lock-in

Establishing a "job-education" matching project. Promote the development of high value-added service industries, set up a "high-skilled job special plan" to encourage enterprises to create jobs such as technical engineers and intelligent manufacturing operation and maintenance. Establish an industry demand response mechanism, requiring universities to dynamically adjust their professional catalogs every two years to ensure that the supply and demand of human capital are accurately matched. The rise of GVC is the fundamental prerequisite for alleviating involution. When the industrial structure is not improved, any education policy is futile. Build a job-professional linkage early warning system. Establish a national labor market information platform. When a certain type of job is in oversupply for three consecutive years, it will automatically trigger the adjustment of the enrollment scale of related majors, breaking the vicious cycle of diploma inflation and employment squeeze. This institutional innovation directly links education decisions with industrial signals, alleviating structural mismatch from the source [7].

4.2. Meso-level policy: building a coordinated "education-social security" system

Establishing a Youth Development Account (YDA). Pilot government-matched family savings accounts, with funds limited to vocational education, skills training or entrepreneurship, and strictly prohibited from subject training. Guide defensive education investment to developmental human capital investment and include account coverage rate in local government KPIs to form institutional incentives. This move directly weakens the risk-avoidance function of education and reduces excessive competition from the root. Strengthen the social security system. In the short term, increase the proportion of social security expenditure to more than 20%, covering 95% of families; in the medium term, explore the pilot of universal basic income (UBI); in the long term, decouple social security benefits from employment [8]. When the basic survival risks of families are shared by society, education can shed its risk-hedging function and return to its original purpose. The comparison between Japan's social security expenditure of 24.7% and education and training expenditure of only 1.2% confirms the effectiveness of this path [9]. Emphasize the decapitation of education resources. Promote the normalization of teacher rotation, use the national smart education platform to achieve digital resource sharing, and strictly prohibit speculation in school district

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housing and "college entrance examination immigration". Weaken the class solidification attribute of education resources, reduce its value as a competitive tool, and restore its public goods attribute.

4.3. Micro-policies: differentiated and precise governance

Relevant departments have built a psychological resilience education system. Primary and secondary schools have set up career planning and psychological resilience courses to help students establish a diverse view of success, and the government has purchased social work services to provide intervention. This will alleviate the psychological root causes of involution anxiety, cultivate resilience and critical thinking, and break the "only academic qualifications" mentality. Relevant departments have built a targeted family support plan. Low-income families have been issued targeted education vouchers, and community parent schools have been fully covered to guide parents to respect individual differences. This will prevent educational involution from being transformed into a tool for class solidification and ensure fair development opportunities for the underprivileged groups [10].

5. Conclusion

This study constructs a three-tiered risk transfer model of "push-squeeze-pressure," revealing that the essence of educational involution is a systemic result of the deep interaction between the global value chain division of labor, national risk-sharing mechanisms, and family behavioral logic. It breaks through the binary opposition of cultural determinism and institutional determinism, proposing the core concept of "alienation of educational safe-haven assets."

This paper connects the macro (GVC constraints), meso (social security gaps), and micro (family defenses) levels to construct a complete transmission chain, restoring educational involution to its origins as a product of systemic institutional imbalances. Based on global structural constraints rather than single-country institutions, this paper explains the transnational commonalities of involution, providing a unified analytical framework for the common dilemmas of developing countries.

Breaking the cycle of educational involution cannot rely solely on educational reforms, nor can it depend on a spontaneous shift in cultural attitudes. It requires a coordinated effort involving industrial upgrading, improved social security, and optimized education to reconstruct the risk-sharing mechanism among the state, market, and family, allowing education to return to its essence of "holistic human development." As the system improves and the status of the GVC gradually rises, a fairer, healthier, and more vibrant educational ecosystem will eventually emerge, injecting lasting momentum into sustainable social development and the improvement of human well-being.

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