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## **Favourable conditions and predicaments for the initial Eurasian HSR in Central Asia from the perspective of Global Connectivity**

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### **Abstract**

In a large part of the world, infrastructure deficits are staggering, especially for a vast of hinterland areas. Basically, in many postcolonial areas and Newly Independent States, the development of supply chain is far ahead of government governance. Therefore, instead of superstitious belief in today's political geography, Human society, particularly decision makers should put aside the limitation of national boundaries, and make better coordination on population, resources and markets by the guidance of the mutual prosperity, stability and interconnection of cities, rather than regard functional geography as a the priority interests. The “Youth Bulge” has become a reality from an imminent challenge in Central Asian Newly Independent Countries. The needs of young people are fully met to a certain extent, which is the cornerstone of the relative stability of the country and region. In recent years, it has been repeatedly proved that young people are the soil of populism and the unstable factor of social unrest. Historically, some countries have gained some positive experiences by building infrastructure on a large scale, such as Japan in the 1960s and South Korea in the 1980s to deal with youth bulge. The construction of high-speed railways will stimulate a large number of new jobs, promote the rapid flow of social and economic factors, and provide people's well-being. Central Asia is located in the high-speed railway vacuum zone between Europe and Asia where high-speed railways are developed. It has the potential to play a role as a bridge connecting the two ends of the continent. It should be listed as a priority sector for development by countries in the region. With such a large-scale railway project planning, the positive prospects and obstacles are very obvious. High-speed railway will drive the region's railway

technology to achieve a qualitative leap, and promote the development of several large cities in the region. The rolling stock is driven by electricity, which will promote the development of photovoltaic resources and the export of electricity resources in the region. The inconsistency of stakeholder interests, which may change dynamically over time, is the biggest impediment to this grand vision. However, in a special historical period when COVID-19 has affected the global economy for two years, any constructive plan deserves serious consideration. This paper aims to explore the feasibility of the Eurasian high-speed rail in Central Asia through an expert survey method.

**Keywords:** HSR in Central Asia, youth bulge, functional geography, connectivity

## 1 Introduction

The distribution of cities in Central Asia presents a scatter-like feature, and there are no super-large cities with strong competitiveness. To some extent, in the field of urban development, Central Asia is weaker than the rest of the world. One of the important reasons is the low level of transportation connectivity between cities in Central Asia. Urban belts, transportation economics, and the socioeconomic spill-over effects of HSR also provide a positive theoretical reference for HSR construction. In the new growth theory, the academic community internalized the progress of technology, indicating the decisive role of knowledge accumulation and human capital accumulation in promoting economic growth. Transport economists and economic geographers believe that convenient transportation conditions are an important factor in economic growth, and point out that the prosperity of a regional country has two main characteristics: a busy industrial and agricultural production foundation, and a busy transportation sector. Polish urban scientist Piotr Zalemba proposed the “point–axis progressive development” theory. “Point–axis development” refers to the development of “point–axis progressive diffusion”, which means that one or several linear transportation facilities that have development value within a certain area has become a development axis in this area. Some points above the axis (usually cities or urban agglomerations) will be prioritized for development and will generate growth poles; but as the economic strength of the points along the axes continues to change, the focus of regional economic development will shift to a concentrated point or centers at relatively lower levels.

With the urban population trend to dominant in the global population, the so-called “Youth Bulge” has become a reality from an imminent challenge. Assume that these young people are not employed effectively; they will not be able to earn enough income to settle down and maintain the social stability.[1] The core region of Eurasia is the most representative region and the most concentrated region of youth bulge. In recent years, it has been repeatedly proved that young people are the soil of populism and the unstable factor of social unrest. Continued social unrest and instability will eventually lead the country to the Fragile States. Mitchell Moss, an expert in urban planning, once pointed out that “having a urban card is more important than having a

university degree.” Transportation and interconnection are the real ways of social mobility. [2]

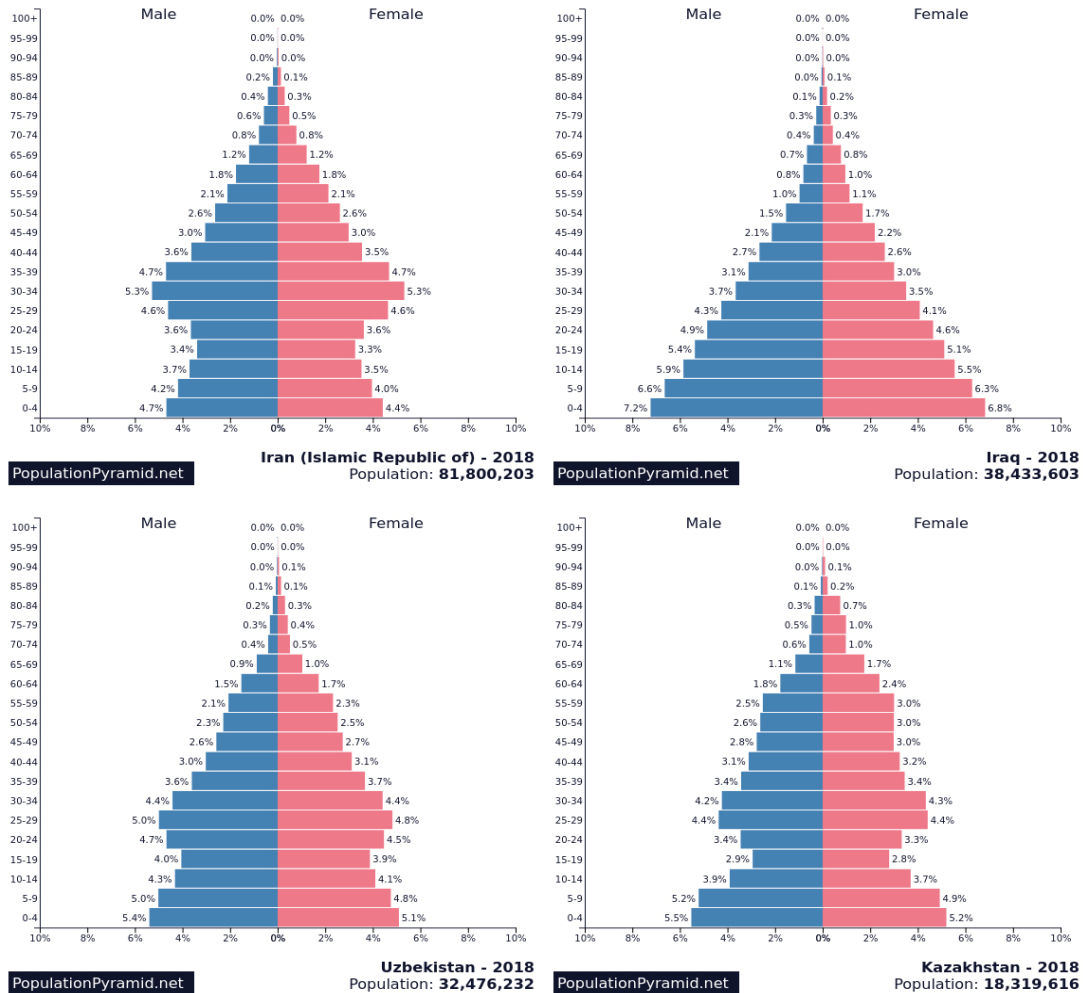


Figure 1: The Population-Pyramid of Four Central Asian Countries.

## 2 Methods

**1. Technical analysis:** In theory, a solution of countries at both ends of the Eurasian continent unite to persuade Russia for adopting or partly adopting international track standards in some channel areas to bridge the Eurasian high-speed railway project could be seen as the most simple scheme. However, Moscow's resolutely refusal to comply with the World standard gauge makes all plans around the north line of Eurasian HSR an impossible illusion. In view of Russia's negative attitude towards the unified gauge, the initial of HSR path that pass through the ancient Silk Road, along the south coast of the Caspian Sea, across strait of Bosphorus in Istanbul, reaches Europe could be considered as the most rational solution for linking Europe and Asia by a highly efficient High-speed rail mainline. This path scheme is designed to cross the infrastructure deficit area with massive dense population and more concentrated

cities, which is also obviously more in line with the real needs of city belt construction and improving connectivity as well as world economic development.

**2. Financial analysis:** Since investors are no longer keen on fictitious and fake financial derivatives, but want to make full use of cheap credit and invest assets in the real economy, infrastructure has become the one of a rational choice for investors. The return on infrastructure asset is higher than that on fixed income, while it is less volatile than that on equity investment. The benefits of investing in infrastructure are immeasurable, and the opportunities it creates not only increase social mobility and productivity, but also stimulate social transformation. As the former chief economist of the World Bank, Justin Lin Yifu has pointed out that capital markets, Investments from multilateral mechanisms and other structural funds should be more invested in regional banks and infrastructural banks, so that these banks could help for creating jobs and promoting connectivity by providing financing for large-scale infrastructure.

**3. Geographical Demographic Factors:** Traditional Eurasian transcontinental trains pass through sparsely populated areas, producing little economic and people-to-people effects. The new high-speed railway will connect the population core cities and promote the flow of economic factors.



Figure 2: Route of Chinese-Russian International Train.

### 3 Results

The objective basic conditions for the construction of Eurasian high-speed railway are feasible in terms of technology and operational experience. However, the plan involves a large number of countries and stakeholders with individual interests, which makes the discussion and consultation ineffective.

In terms of the existing resource base and actual demand, Eurasia has concentrated most of the world's high-speed rail network and high-speed rolling stocks. Intercontinental railway freight volume, especially the value of goods, continues to rise, and the demand for passenger train services is also increasing. To this end, scholars all over the world have put forward some sort of ideas for the potential Eurasian high-speed railway. Considering the optimal choice of unified gauge, Iran could be seen as a crucial key point for the Eurasian high-speed railway as Iran also adopts world standard gauge.

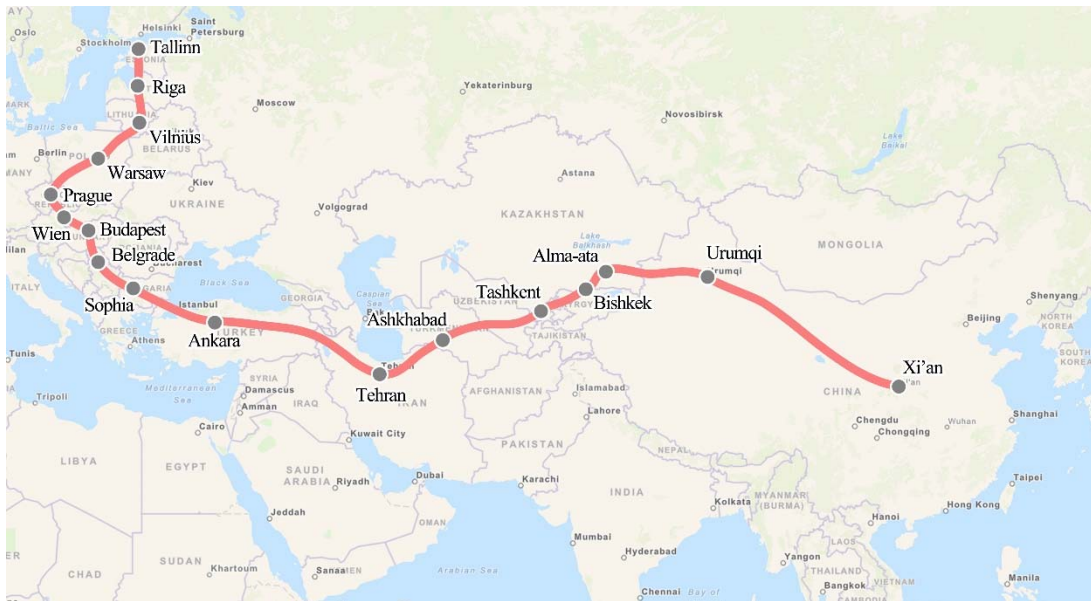


Figure 3: Sketch map of Eurasian HSR.

Eurasian HSR initiative aims to shift comfortable and highly efficient trains in-between Europe and Asia while covering cities and populations as more as possible.

### 4 Conclusions and Contributions

This paper systematically analyses the advantages and disadvantages of the construction of the Central Asia section of the Eurasian high-speed railway. The paper also pointed out the importance of increasing investment in such large-scale infrastructure construction in the post-epidemic era. Concerning to dual demands of goods transactions and personnel exchanges, the initialed Eurasian HSR suppose to provide support for economic ties, production capacity, resource development,

investment and trade among countries along the line, vigorously promote the economic growth of relevant countries, provide new and strong impetus for deepening regional cooperation as well as comfort to the common interests. In addition to analyzing the potential and potential benefits of railway construction, this paper also analyses the barriers. The article summarizes the comprehensive factors of railway technology, economy, finance and international politics.

In the era of sea power, the position of the transportation fulcrum in Central Asia was weakened. However, with the development of land transportation technology and the advancement of aviation technology, the geographical importance of Central Asia has once again become prominent. In the context of the impact of the epidemic, Central Asia is heavily dependent on resource exports, and the weakness of the lack of endogenous development momentum is obviously exposed. The political upheaval in Kazakhstan in January 2022 has proven that the burst of energy in which the social needs of the youth population are not adequately met is astonishing. The social elites in the region need to think seriously about how to reconcile the increasingly fierce social contradictions with the overall social development fundamentally. Adhering to a more open and inclusive mentality on the issue of cross-border high-speed railways and replacing conservative views with constructive opinions is urgently needed by many policymakers in the region.

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