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Fairness Analysis based on Wage Distribution Model

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Abstract

We looked for the investment and income (rate) of asteroid mining in 233 countries and regions around the world, the number of high-quality universities (as a percentage of all local universities), and the number of high-quality talents (as a percentage of the total workforce). Percentage) and other eigenvalues, using a comprehensive evaluation model to evaluate and predict the prospect of asteroid mining, and explore the impact of asteroid mining on global equity, and use the wage distribution model to distribute according to eigenvalues, so as to draw the conclusion: small Planetary mining has a greater impact on global equity mainly from countries with strong comprehensive strength, while the number of high-quality universities and high-quality talents have a greater impact on comprehensive strength, accounting for 0.39 and 0.41 respectively. The constraints of rules may have a greater impact on global fairness.

Keywords

Wage Distribution; Equilibrium; Education Advantage; Global Equity.

1. Introduction

1.1 Background

We cannot determine what the future of the asteroid mining industry will look like, and how it will affect global fairness. There are still many factors, such as different miners, different funding sources, and beneficiaries. Different types may have different degrees of impact on global equity. To explore its impact on global equity, we need to propose, describe and justify a possible future of asteroid mining, as well as its own impact on global equity.

1.2 Our work

We need an evaluation model to qualitatively evaluate and allocate the mineral resources mined by asteroids. In addition to considering the situation of each country, we also need to add the concept of "investment and income", otherwise, the allocation ratio and the number of countries will appear. In proportion to the wrong situation, we can add some technological factors (the number of universities or the number of talents), and the market consumption (the consumption of minerals) as "the future of mining.

2. Model Assumptions

When considering the issue of measuring global equity, this paper assumes the absence of large-scale population migrations and severe financial crises. Mass migrations and severe economic crises may affect the accuracy and plausibility of models, or may affect the definition of global equity.

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3. Wage Distribution Model

3.1 Data Processing

Based on this subject, we need to propose, describe and demonstrate a possible future of asteroid mining, as well as its own impact on global equity. This paper joins 233 countries and regions around the world. For asteroid mining investment and income (rate), number of high-quality universities (% of total local universities), number of high-quality talents (% of total labor force), domestic market consumption (% of global consumption), export market volume (% of global exports), import market volume (% of global imports), etc. 15 eigenvalues, using a wage distribution model to combine the 15 eigenvalues, based on the total income value of asteroid mining, based on the number of high-quality universities , Guided by the number of high-quality talents, closely link the yield of asteroid mining with domestic market consumption, import market volume, and export market volume, implement a distribution system based on technology, talents, and income, and analyze its impact on global equity.

Table 1. Raw data map

Country	*Number of quality universities*	*Number of high-quality talents*	*Domestic market consumption*	*Export amount*	*Import volume*	*investment to income ratio*
Argentina	1709	2077.53	30503.25	611032.2	49035.42	0.761592
China	2956	96353.7	1009793	610675.8	50250.84	0.369501
France	1432	3574.5	46052.96	326474.4	68787.5	0.771338
U.K	1582	3794.9	48342.36	576705.2	69101.96	1.032048
India	8410	54856.9	578746.7	514031.4	44883.87	0.538862
new Zealand	1924	206.4	11066.97	419878.4	69556.11	0.591519
The Russian Federation	1306	7583.4	87695.24	641345.1	49969.46	0.371181
America	5762	16589.3	181243.6	579259.4	83598.07	0.550218
Kenya	1263	1926.8	28937.55	128663.6	44930.6	0.528176
Spain	1417	2289.4	32704.04	628560.2	60739.36	0.948616

3.2 Data Processing

We need to simply process the original data to exclude inappropriate data, then calculate the indicator weight, and analyze the weight of each indicator according to the results.

The weight calculation results of the entropy weight method show that the weight of the number of high-quality universities is 39.039%, the weight of the number of high-quality talents is 41.879%, the weight of the export volume is 5.961%, the weight of the domestic market consumption is 5.467%, and the weight of the import volume is 7.654%, of which the maximum value of the indicator weight is the number of high-quality talents (41.879%), and the minimum value is the domestic market consumption (5.467%).

4. TOPSIS Comprehensive Evaluation

Next, we calculated the results using the TOPSIS evaluation method. It is necessary to distinguish the categories of indicators in the indicator system (high-quality or low-quality), and according to different types of indicators, different formulas need to be forwarded. Secondly, a standardized matrix is constructed, and the gap between each evaluation index and the optimal and worst vectors is calculated, and finally the closeness of the evaluation object to the optimal solution is obtained in the following table.

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Table 2. National Comprehensive Score

index value	*Positive ideal solution distance (D+)*	*Negative ideal solution distance (D-)*	*Comprehensive score index*	*sort*
Argentina	0.7277943	0.16922607	0.18865354	5
China	0.4031441	0.58485305	0.59195824	2
France	0.74110671	0.10472723	0.12381536	10
U.K	0.73063619	0.13076241	0.15180244	8
India	0.24542665	0.62222423	0.71713663	1
new Zealand	0.73108096	0.1210073	0.14201263	9
The Russian Federation	0.72471976	0.17015028	0.19013966	4
America	0.51346729	0.35591239	0.4093866	3
Kenya	0.75634216	0.14918405	0.16474847	7
Spain	0.7426403	0.1468211	0.16506742	6

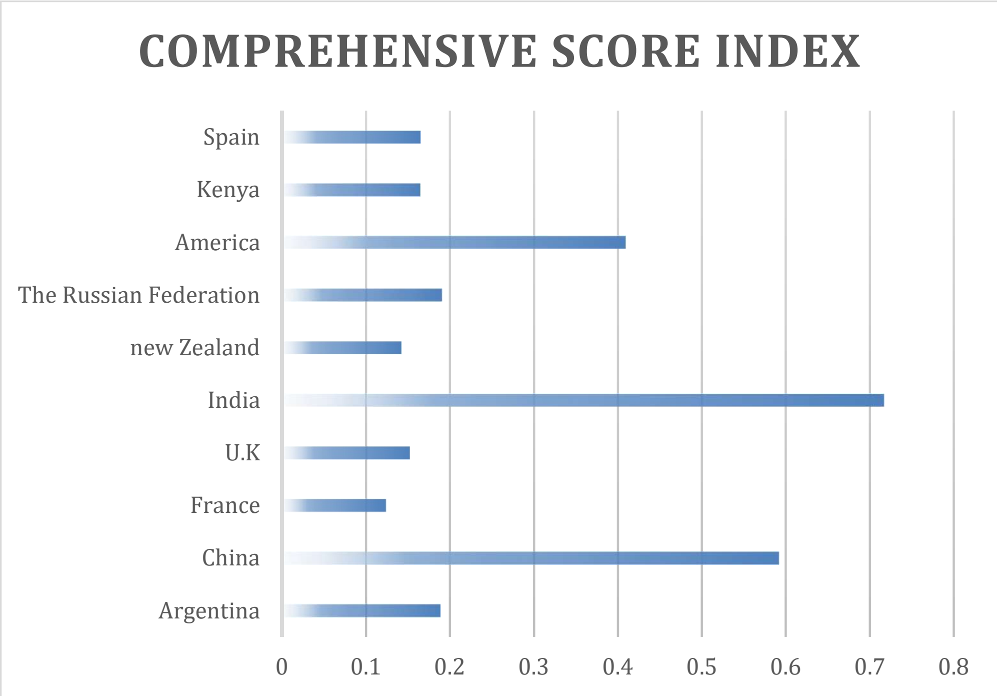

Fig 1. Composite Score

From the above table, it can be seen that India has the highest comprehensive evaluation, which shows that after the comprehensive population, the number of high-quality talents, and the import and export market volume, India's asteroid mining business has a greater impact on global equity, and the distance from the negative ideal solution is relatively far away, while the distance from the positive ideal solution is relatively large. The solution is relatively close.

The table below gives the values for the positive ideal solution (best solution) and the negative ideal solution (worst solution).

Table 3. Component weights

item	*Information entropy value e*	*Information utility value d*	*Weights*
Number of quality universities	0.606	0.394	0.39
Number of high-quality talents	0.577	0.423	0.419
Export amount	0.94	0.06	0.06
Domestic market consumption	0.945	0.055	0.055
Import volume	0.923	0.077	0.077

Table 4. Positive ideal solution and negative ideal solution

item	*Positive solution*	*negative ideal solution*
Number of quality universities	0.82538233	1.00E-08
Number of high-quality talents	0.85692845	0
Export amount	0.39864203	0
Domestic market consumption	0.36592987	0
Import volume	0.44464877	0

5. Conclusion

From this, it can be concluded that asteroid mining is closely related to the number of high-quality universities and high-quality talents in the country. The mining of more asteroid minerals by countries with stronger comprehensive strength will damage global equity to a certain extent. In the future, we need to formulate a reasonable rules to regulate asteroid mining, so that countries with stronger comprehensive strength can mine enough minerals without reaching a monopoly level, otherwise it will have a negative impact on global fairness.

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