

Race to the Top and Bottom: Globalization and Education Spending in China

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Introduction

In the past few decades, globalization has probably been the most significant social economic force that shapes the world we live in. Especially economic globalization, the increasing integration of almost every country on earth into the world markets for goods, services, capital, and labor has had tremendous impact on governments and peoples. The contemporary controversy surrounding economic globalization often stems from disagreement over its human cost. Critics of globalization see it as a tool to exploit the poor, while advocates point to the benefits that globalization has brought to underdeveloped nations.

An interesting research question that would have direct bearing on the normative debate over the human cost of globalization is whether exposure to foreign trade and investment stimulates or constrains government spending on quality-of-life items, such as social security, education, and health care. Theoretically both scenarios have plausible foundations, and each has received some empirical support in cross-national and within-nation studies, respectively. For the sake of convenience I shall call these two scenarios "race to the top" and "race to the bottom" respectively and discuss them in turn next.

Competing Hypotheses

According to the scenario of "race to the top," globalization intensifies the competition between governments in public spending on human capital formation. Theoretically it is based on simple assumptions about the incentives of investors and governments. The decision by

multinational corporations to choose the location of their investment is based on a wide variety of considerations, and the level of human capital in a prospective country is an important factor. Domestic firms exposed to international market also benefit from and thus would welcome government spending to increase human capital. Human capital formation especially in the areas of education and health care generally contributes to a high-quality and productive workforce that help both domestic and foreign-invested companies remain competitive in the world market. Having recognized the value of human capital to investors abroad and at home, national governments will spend more on such budget items as education and health care, and the race to attract foreign capital and to remain globally competitive is in effect turned into a "race to the top" of domestic human capital formation.

The "compensation" hypothesis also predicts a stimulating effect of globalization on social expenditures but is based on quite different theoretical foundations than the scenario of "race to the top." According to the "compensation" hypothesis, globalization exacerbates economic inequality and insecurity, which in turn prompts governments to increase social spending in order to compensate the losers from globalization (Garrett 2001: 3) and to prevent political instability (Kaufman and Segura-Ubiergo 2001: 557). Indeed, even in its relative infancy in 1960, economic globalization was already found to be "the best single predictor" of the extent of expansion of the public economy in industrialized Western countries (Cameron 1978: 1254).

Even though both the "compensation" hypothesis and the scenario of "race to the top" have the same predicted outcome, that is, increased government social spending, it is interesting to

note that such increase in spending is driven by different budget items under each scenario.

The "compensation" hypothesis is obviously more relevant to government's welfare expenditures on such programs as social security, unemployment benefits, retraining, etc. that provide income supplements (Cameron 1978: 1258). The "race to the top," on the other hand, mostly concerns government investment on human capital formation such as education and health care. In other words, government spending on education and health care does not necessarily "compensate" those at risk due to increasing integration into the world market (Hecock 2006: 952).

The scenario of "race to the bottom" predicts the opposite effect of globalization on social spending. According to this scenario, international and domestic firms are more interested in lowering their cost, especially their tax burden, than in having access to a high-quality productive (but more expensive) labor force. Faced with the pressure to remain competitive in attracting foreign investment and in helping domestic businesses, governments will choose to constrain their fiscal capacity by cutting down expenditures on social programs. In the end, states converge to the lowest common denominator in public spending. This theoretical scenario is consistent with the argument that competition between governments results in more efficient public spending and therefore can be called the "efficiency" hypothesis (Garrett 2001: 6, Hansson and Olofsdotter 2008: 1004). Besides explaining government spending, the scenario of "race to the bottom" has also been applied to other areas of government behaviors, such as reduced regulation and lower environmental standards.

Given the directly opposite predictions of the scenarios of "race to the top" and "race to the bottom," it would seem a simple and straightforward empirical question as to which one can stand the test of real world observations. However, there are important complications when we consider the empirical test of the above scenarios in comparative studies. First, as abovementioned while both the "race to the top" and the "compensation" hypotheses predicted a rise in social spending in the face of globalization, the specific areas of budget increase can be quite different under each scenario. Therefore, it would require detailed information on disaggregated government budget allocation to test directly either the "compensation" or the "race to the top" hypotheses. In developing countries that data is not always easily obtainable.

Second, domestic political institutions such as democracy, interest groups, and political parties further complicate the theoretical scenarios concerning the fiscal implications of economic globalization. For instance, inspired initially by the experiences of European social democracies, the "compensation" hypothesis seems to be less applicable in the developing world, especially in non-democracies, where public demands for compensation do not necessarily translate into government spending programs. Findings by Kaufman and Segura-Ubiergo, for instance, "suggest that Latin American democracies do generally support demands for more progressive forms of social spending" and that "regimes matter" (2001: 584). Likewise, Bhagwati argued that "a set of strong institutions, including labor unions and social democratic parties" can neutralize the globalization pressures for countries to race to the bottom (2004: 101). Such institutions would obviously be absent in an authoritarian regime, which calls into question the

applicability of the “compensation” hypothesis. Besides, state capacity in developing countries to intervene in their economy may be more constrained by various obstacles. For instance, agricultural subsidies are probably one of the most important mechanisms used by rich nations to compensate farmers exposed to the world market, but building an adequate infrastructure for even information collection and implementation of such compensations has proven to be a daunting task for many poor developing countries. In all, compared with advanced industrial democracies, developing countries may lack the incentive or capacity to compensate their domestic losers from globalization.

Third, the worldwide trend of fiscal decentralization in recent decades has further complicated the comparative study of the impact of globalization on government social spending. To varying degrees many national governments especially in the developing world have delegated spending responsibilities on such budget items as education and health care to sub-national levels. That adds another layer of analysis to the already intricate nexus between globalization and social spending. Sub-national governments within a same country may be affected by globalization in rather different ways and thus may develop quite different incentives concerning social expenditures. In a highly decentralized system, for instance, the fiscal impact of globalization may be prominent in only a few locations that are well exposed to international trade and investment while the country as a whole does not experience any significant variation in government social expenditures as a result of globalization. So far cross-national studies do not seem to have paid adequate attention to the domestic allocation of social spending responsibilities in the analysis of government incentives in the face of globalization.

The Chinese Context

During the past three and a half decades, perhaps no other country has been more profoundly transformed by economic globalization than China. When the Chinese Communist Party launched its ambitious program of “reform and opening up” in 1978, China’s total foreign trade was a meager 20 billion dollars, representing less than 10 per cent of China’s equally meager GDP at the time. Fast forward to 2012, and China exchanged 3.9 trillion dollars’ worth of goods and services with the rest of the world, surpassing the United States to become the largest trading nation in the world according to the U.S. Commerce Department (Bloomberg News 2013), which was however disputed by the Chinese Ministry of Commerce (2013). What is probably no less dramatic is the increase of foreign direct investment in China from virtually zero in 1978 to over 100 billion dollars since 2010, making China the second biggest recipient of FDI, only after the United States (Ministry of Commerce 2013). A recent study suggests that foreign invested enterprises may have contributed over 40 per cent of China’s economic growth in 2003 and 2004 (Whalley and Xin 2010)

While a study of the case of China may seem at first blush less powerful than a cross-national study, the former actually offers important advantages that could contribute to our understanding of the fiscal consequences of economic globalization. Some of the potentially complicating factors mentioned above are conveniently controlled for in the context of a single country of China. Democratic institutions, political party competition, and powerful interest groups such as labor unions, for instance, are conspicuously absent throughout China. That

suppresses political demands for government compensation in the form of income supplements and removes one of the key components of the causal story in the “compensation” hypothesis. The theoretically relevant scenarios in China thus form an interesting competition between to “race to the top” of human capital formation and to “race to the bottom” of the most efficiency.

Secondly, the abovementioned difficulty of accounting for significant cross-national variation in fiscal decentralization would manifest less prominently within the Chinese context. China’s policy implementation has been highly decentralized in many areas, including both FDI (World Bank 2010; Malesky 2008: 97) and education (Guo 2007: 216). That points to a study at the subnational level as a potentially fruitful avenue of research. The enormous variation both across regions within China and over time as regards both FDI inflows and social spending also seems a helpful feature from the perspective of empirical research.

China’s 31 provinces, including five autonomous regions and four directly administered municipalities, are country-sized entities. In terms of population, each of the ten most populous Chinese provinces would rank among the top 25 independent nations of the world, and all except Tibet would rank above most countries. In terms of land area, only eight provinces would rank below 100 among all the independent countries of the world (Central Intelligence Agency 2013). Each province has distinct natural endowment such as geographic location, mineral resources, etc. which determines to a large extent their comparative advantages in attracting foreign direct investment. Urban population centers on the Pacific coast of China

with proximity or convenient transportation links to advanced East Asian economies have been magnets of FDI inflows. Two provinces, Guangdong and Jiangsu, accounted for more than a third of FDI inflows to all provinces in 2010 and 2011 (National Bureau of Statistics 2012). While the exogenous factors of natural endowment are certainly crucial, the regional competition to attract FDI also hinges on the supply of high-quality physical infrastructure such as development zones (Zhang 2011) and transportation projects. That adds an important twist to the theoretical scenario of “race to the top”. In the original formulation mentioned above, governments increase public spending on human capital formation in the face of competitive pressure brought about by economic globalization. However, it may well be the case that governments respond to intensifying competition for FDI by also boosting infrastructure spending, which could mean human capital expenditures being “crowded out” in relative terms.

One empirical implication of the above discussion is that it is possible for Chinese provinces to “race to the top” and “race to the bottom” simultaneously and the “race” analogy would no longer make sense with respect to education spending. In the face of rising FDI inflows and increased competition pressure, provincial governments may decide to spend more money on education in response as investment in human capital. At the same time, they may also have to boost the overall budget expenditures to remain competitive. Therefore, while the absolute level of education spending may rise with the inflow of FDI, it is theoretically unclear a priori whether the relative level of education spending in the overall government budget would rise as well.

From the perspective of provincial leaders, education spending does not represent a very “efficient” way to use budget funds. The primary motivation for political leaders is career advancement, and in an authoritarian regime like China the leaders’ career advancement does not require popular endorsement in regular elections. Rather they are accountable to their superiors. In the case of China, the appointment and removal of government leaders are determined by superior communist party committees in the nomenklatura system borrowed from the former Soviet Union. In the reform era, one of the most important criteria used in the evaluation of government leaders is the record of economic performance of the jurisdiction that they are in charge of. While education and other human capital investment certainly can help economic performance in the long term, provincial leaders are rarely concerned about the long term. Among the 79 provincial party committee secretaries who left office in one way or another during 2000-2011, the average time in office was 3.8 years and the median was four years. Given the extremely short time horizon of provincial leaders, it should come as no surprise that short-term economic stimulus such as physical infrastructure projects become attractive areas to devote budgetary resources to.

Hypothesis 1: All else being equal, education spending rises as a result of increased inflow of foreign direct investment.

Hypothesis 2: All else being equal, education spending decreases relative to other budget items as a result of increased inflow of foreign direct investment.

Data and Variables

To test the above two hypotheses, it obviously requires statistics on both absolute levels and relative proportions of education spending in Chinese provinces. The statistics are derived from the publicly available annual reports on education funding published every December by China's Ministry of Education (formerly the State Education Commission) and the State Statistical Bureau, which contain statistics on budgetary spending on education for each of China's 31 provinces. The values of the in-budget spending on education are then transformed into per capita constant 1990 values using the annual provincial population and consumer price index (CPI) numbers. The overall average spending level for a province was 183 yuan per capita, and the measure varies widely both across provinces and over time. It has a standard deviation of 212 yuan, ranging from 52 yuan per capita in Hubei Province in 2001 to 2,079 yuan per capita in Tibet in 2011.

The proportion of education spending in provincial budget saw much less variation across provinces and over time, with a mean of 19 per cent and a standard deviation of 2.6 per cent. It ranges from 9 per cent in Tibet in 2001 to 26 per cent in Fujian Province in 2002.

The key independent variable in this study is the inflow of foreign direct investment. The official statistics on the total registered capital of foreign invested enterprises in each province is listed in the annual editions of the China Statistical Yearbook. This was then converted into proportions of provincial GDP using annual data on year-end US dollar-RMB exchange rates and

on regional GDP. The average value of the variable is 55 per cent and the standard deviation is 77%. It ranges from 5 per cent in Xinjiang Autonomous Region in 2011 to 594 per cent in Hainan Province in 2007. Since the effect of FDI inflows is unlikely to be simultaneously or immediately manifest in public spending, this variable is lagged by one year.

Other important factors that need to be controlled for in explaining government spending on education include economic development level, illiteracy rate, and youth population. The first is measured by provincial GDP obtained from the annual editions of the China Statistical Yearbook, again divided by both provincial population and discount factor calculated from annual consumer price index figures for each province. The resulting variable has a mean of 5,890 yuan and a standard deviation of 5,190 yuan. Illiteracy rates for each province are also listed in the annual editions of the China Statistical Yearbook. Finally, proportion of the population under the age of 15 for each province was calculated from the results of the annual population sample survey reported in China Statistical Yearbooks. All three control variables are expected to be positively correlated with government spending on education. Higher levels of GDP per capita enables provincial governments to spend more on education, and higher levels of illiteracy and youth population indicate more needs for education funding. The descriptive statistics for the dependent and explanatory variables are listed in Table 1 below.

(Table 1 about here.)

Methods and Findings

Since both dependent variables are measured in budgetary figures, the single best predictor for them is the level and proportion of education spending in the previous year. From the perspective of provincial leaders when they make annual budget decisions, the most readily available reference is the budget of the previous year. The concept of “zero-based budgeting” has often been mentioned in Chinese official documents but rarely used in practice. Therefore, the model is specified as a dynamic panel data model with the lagged dependent variable on the right-hand side of the regression equation. To capture the possible impact of national funding cycles, a full set of dummy variables for the 10 years from 2002 through 2011 are included. The coefficient estimates are obtained using the Arellano-Bond GMM method. The results are shown in Table 2 below.

(Table 2 about here.)

Unsurprisingly the effect of the lagged dependent variables did turn out to be statistically significant. However, the most important and interesting finding is that FDI inflows increases the absolute level but decreases the relative proportion of education spending. As the FDI/GDP ratio rises by one standard deviation, government spending on education would rise by 3.85 yuan per capita in the following year. The effect is probably small in magnitude but statistically significant at the 5 per cent level. This confirms the theoretical scenario of the “race to the top”

in which governments respond to rising FDI inflow with increased investment in human capital formation.

On the other hand, however, the results also suggest that FDI inflow actually decreases the relative weight of education funding in the overall budget. This seems to lend support for the “race to the bottom” scenario in which education spending is seen as an inefficient way of using public funds and in response to the competitive pressure brought about by rising FDI inflows governments divert budgetary priorities from education to other more productive areas of expenditures. Again the regression results show an effect that is small in magnitude but statistically significant at the 5 per cent level. As the FDI/GDP ratio rises by one standard deviation, the proportion of total government budget spent on education is expected to decrease by a quarter of a percentage point. To put that in perspective, the standard deviation of the latter is only 2.6 percentage points, and so the estimated effect may not be as minuscule as it seems.

None of the coefficient estimates for the three control variables attained statistical significance even at the 10 per cent level. It may seem somewhat surprising that budgetary spending on education in Chinese provinces correlate with neither the capacity nor the needs for education funding. However, since provincial leaders in China are effectively shielded from upward political pressure and only accountable to superior party committees, their budgetary decision making is probably unresponsive to either funding capacity or funding needs.

Finally, the set of dummy variables for each year from 2002 through 2011 reveals an intriguing temporal pattern of five-year cycles of funding surges in 2002 and 2007. Not coincidentally both years were the time of turnover of party and government leaders in China. In 2002 twelve provincial party secretaries were replaced, and in 2007 more than half of the provincial party secretaries were replaced. The number of turnovers for other years was no more than 8. The exact reason for rising education funding during times of leadership turnover still needs further research.

Conclusion

The question of whether economic globalization promotes or depresses governments' social spending has attracted social scientists' attention for decades. The "compensation" hypothesis, the "race to the top" hypothesis, and the "race to the bottom" hypothesis make divergent predictions about the effect of globalization on different categories of public spending. This study attempts to adapt the debate to the context of China, which has probably been more profoundly transformed by economic globalization than any other country on earth in the past three and half decades. While the "compensation" hypothesis is no longer a viable theoretical contender in the Chinese context due to the authoritarian nature of the regime, the "race to the top" and "race to the bottom" scenarios still present testable hypotheses on the relationship between the inflow of foreign direct investment and government funding for education. It is argued that regional governments in China could be racing both to the top and to the bottom simultaneously in the face of rising competitive pressure brought by FDI. A dynamic panel data analysis of statistics from Chinese provinces over an 11-year period

confirmed that FDI inflows increases the absolute level but decreases the relative weight of education spending in the overall budget.

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Table 1: Descriptive Statistics of the Dependent and Explanatory Variables

	unit	mean	standard deviation
Dependent variables			
In-budget spending per capita on education in constant 1990 value	yuan	183	212
% of total government budget spent on education	%	19	2.6
Explanatory variables			
FDI stock/GDP	%	55	77
GDP per capita in constant 1990 value	yuan	5890	5190
Illiteracy rate	%	12	9
% of population under 15	%	23	8

Table 2: Dynamic Panel-Data Regression of Education Spending in Chinese Provinces

Dependent variable	In-budget spending per capita on education in constant 1990 value		% of total government budget spent on education	
Explanatory variables	Coefficient estimate	Robust standard error	Coefficient estimate	Robust standard error
Lagged dependent variable	1.029***	0.013	0.430***	0.061
Lagged FDI stock/GDP	0.050**	0.020	-0.003**	0.001
GDP per capita in constant 1990 value	0.001	0.002	0.000	0.000
Illiteracy rate	-0.972	0.620	-0.004	0.025
% of population under age 15	4.765	3.097	0.013	0.056
Year 2001	Base			
Year 2002	5.686*	3.350	0.588**	0.251
Year 2003	-8.582**	4.359	0.227	0.249
Year 2004	-8.172	7.935	0.200	0.351
Year 2005	2.897	6.550	-0.180	0.271
Year 2006	-11.782	19.445	-0.119	0.357
Year 2007	21.261**	10.556	1.193**	0.470
Year 2008	-2.561	19.158	0.353	0.402
Year 2009	2.523	19.661	-0.502	0.496
Year 2010	-18.077	26.690	-0.442	0.600
Year 2011	28.805	22.690	0.001	0.720
Constant	119.070*	70.568	10.439***	1.877
Number of observations	341			
Number of provinces	31			

Note: ***: p<1%; **: p<5%; *: p<10%.