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東京大学

世界のなかのインド経済

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アウトライン

自己紹介

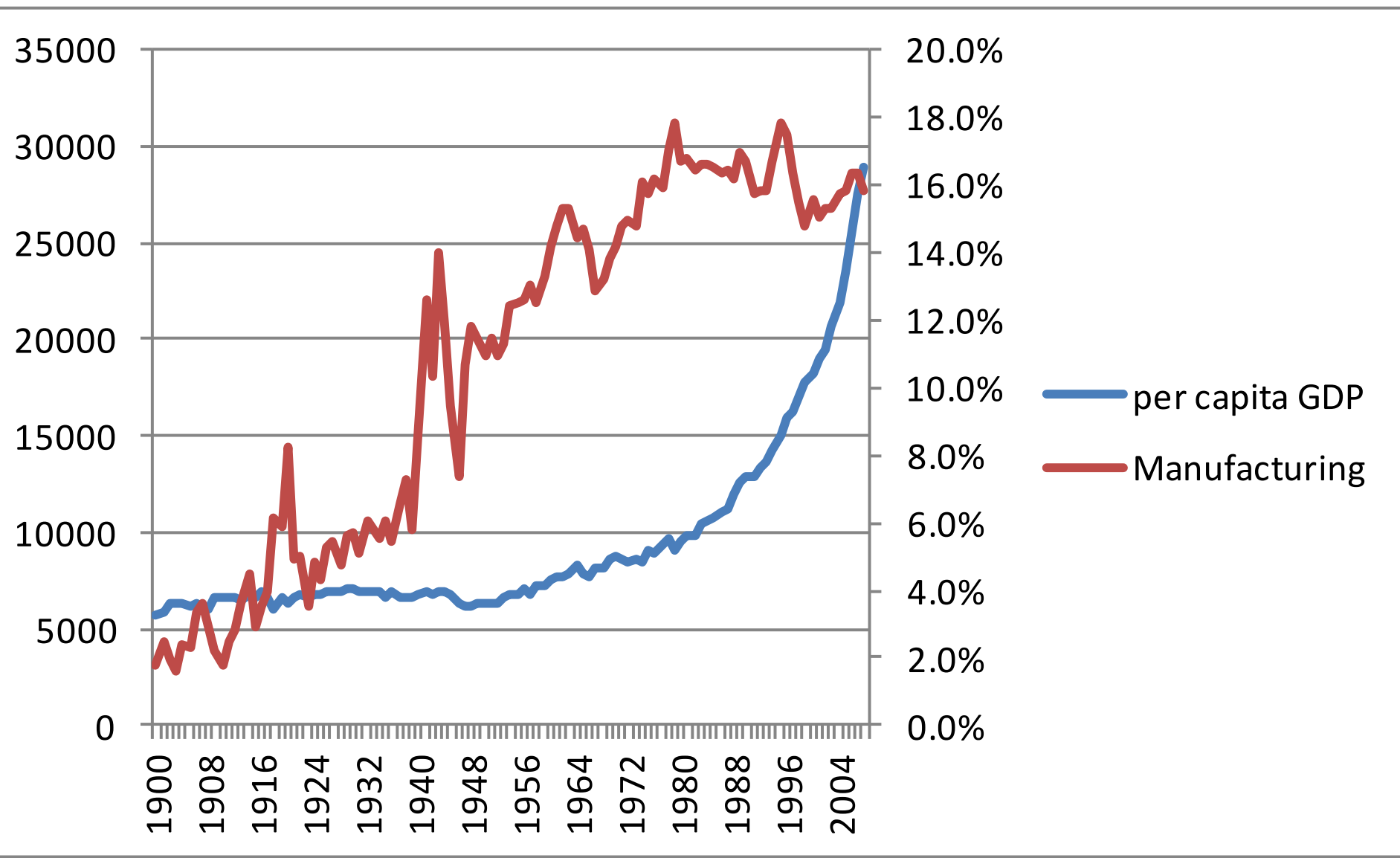
はじめに

1 長期経済成長からみたインド経済

2 制度と長期経済成長

おわりに

Figure: Per capita GDP (Rupee, Base Year: 1999-2000) and Share of Manufacturing Sector (%)



Source: Sivasubramonian (2000) and CSO, *National Account Statistics*.

Research Outputs

1. Kato, Atsushi and Takahiro Sato (forthcoming) "The Effect of Corruption on Manufacturing Sectors in India," *Economics of Governance*.
2. Sato, Takahiro and Aradhna Aggarwal (forthcoming), "Productivity Dynamics and Rural Industrialization in India," Tsukasa Mizushima (ed.), *Actualities of Indian Economic Growth at Rural-Urban Crossroads*, Rutledge.
3. Kato, Atsushi and Takahiro Sato (2014), "Greasing the Wheels? The Effect of Corruption in Regulated Manufacturing Sectors of India," RIEB Discussion Paper, DP2014-07.
4. Fujimori, Azusa and Takahiro Sato (2013) "Productivity Growth and Technology Diffusion in the Indian Manufacturing Industries: An Empirical Investigation on the Spillovers from Foreign Direct Investment," manuscript submitted to a peer-reviewed international journal.
5. Atsushi Kato and Takahiro Sato (2013) "Threats to Property Rights: Effects on the Economic Performance of the Manufacturing Sector in Indian States," *Journal of Asian Economics*, 26, pp. 65-81.

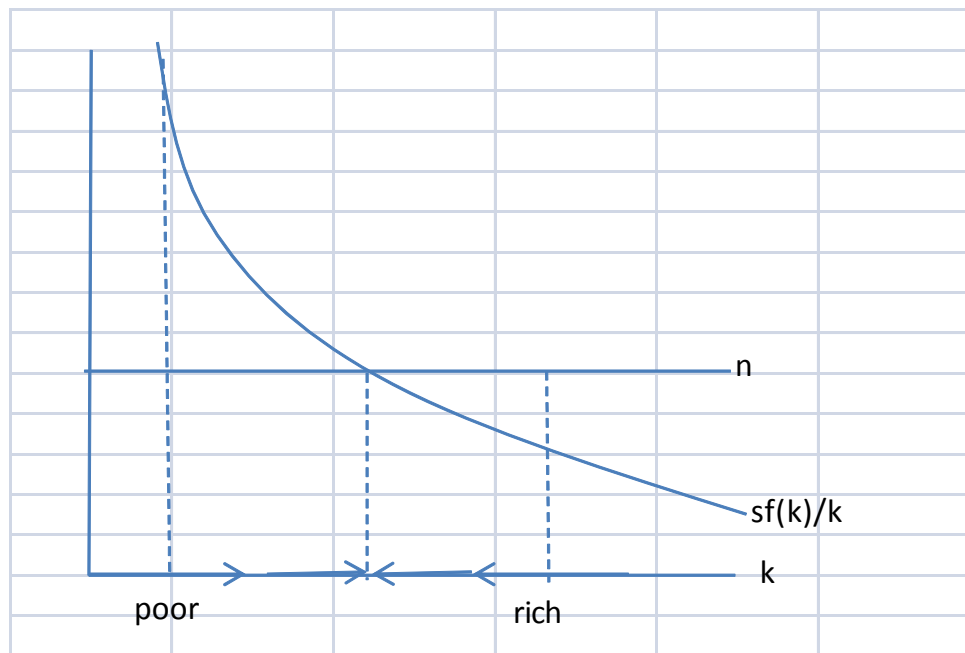
はじめに

- 長期経済成長の重要性。
- 所得が倍になるのに要する年数：年率1%→70年、3.5%→20年、7%→10年。
- 第1節：経済成長とその決定要因を切り口として、世界のなかでのインド経済の特徴を明らかにする。**成長回帰分析** (Growth Regression) の応用。
- 第2節：制度と長期経済成長に関する研究の紹介。

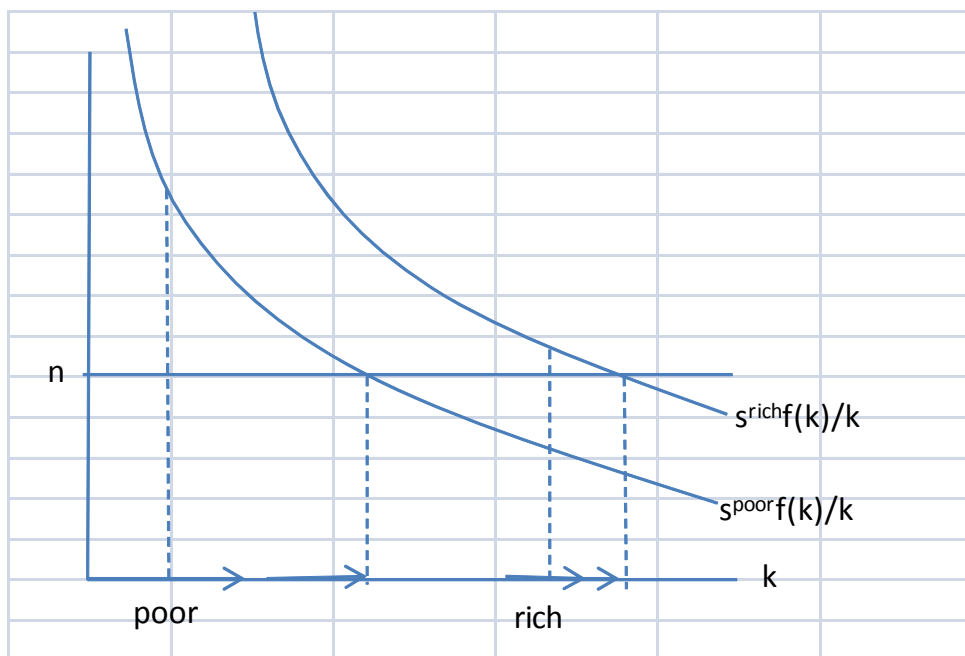
1 長期経済成長からみたインド経済

- 新古典派経済成長モデル。
- 「絶対的収束」(Absolute Convergence) : 各国が初期値の如何にかかわらず**同じ**定常状態に収束する。
- 「条件付き収束」(Conditional Convergence) : 貯蓄率・生産性・労働人口成長率で違いを持つ国々が、初期値の資本労働比率の如何にかかわらず、**それぞれの**定常状態に収束する。

図表乙 パネルA



パネル B



実証分析戦略 (Empirical Strategy) :

1. クロスカントリー(パネル)データを用いた成長回帰分析 (Growth Regression) を行う。
2. 成長回帰分析で示唆される経済成長率と経済成長要因との関係 (散布図) のなかに、インドの軌跡をプロットする。
3. 視覚的に、世界のなかのインド経済の特徴をチェックする。比較の対象として、中国も取り上げる。

図表3 変数の記述統計量

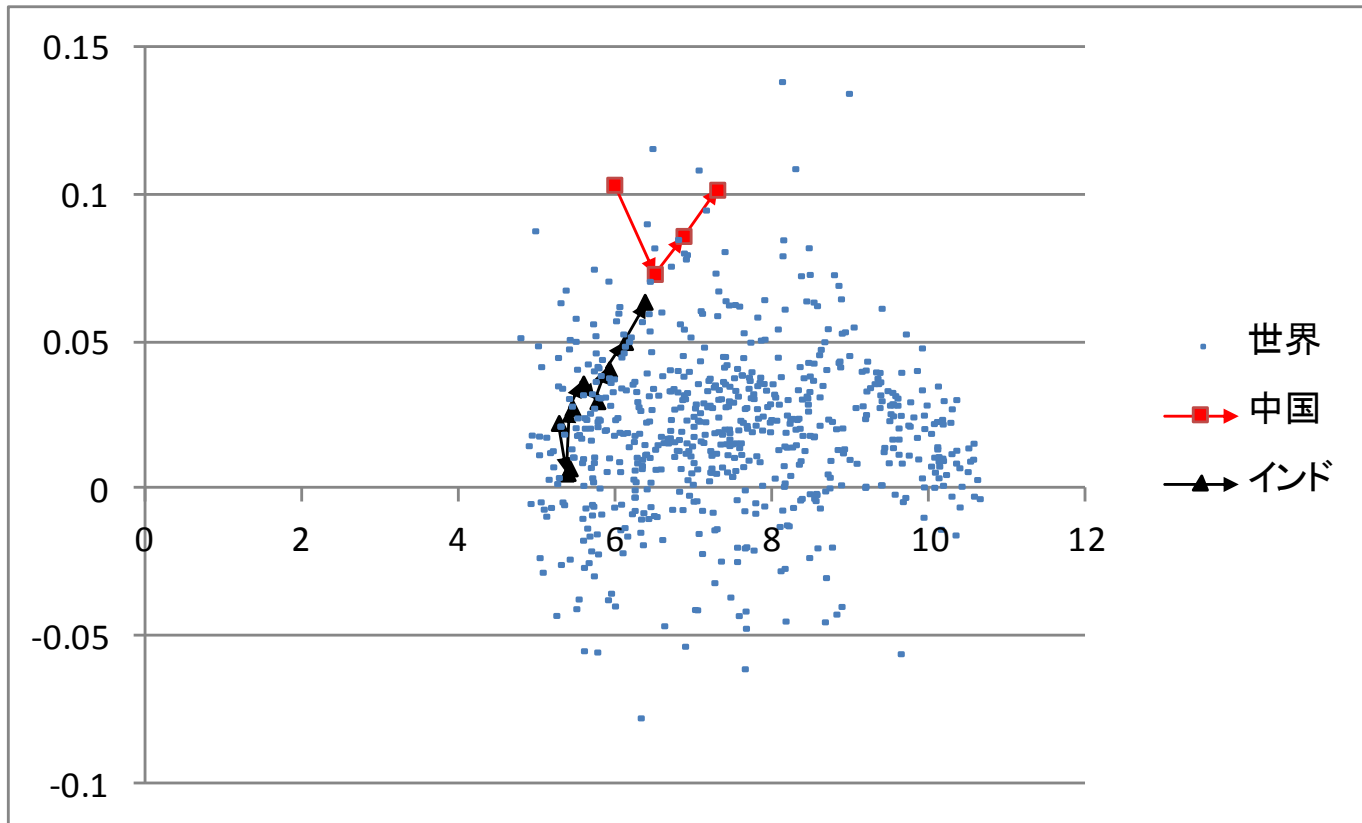
	資料	平均	標準偏差	最小	最大
1人当たりGDP成長率	WDI & GDF	0.021	0.028	-0.078	0.139
1人当たりGDP(自然対数値)	WDI & GDF	7.41	1.46	4.74	10.61
インフレ率	WDI & GDF	0.120	0.216	-0.043	2.224
政府消費比率(%)	WDI & GDF	14.5	5.4	4.1	40.6
投資率(%)	WDI & GDF	22.3	7.2	4.8	66.5
交易条件の変化率	Barro and Lee (1994), WDI & GDF	-0.0003	0.055	-0.308	0.310
貿易開放度(%)	WDI & GDF	70.2	48.3	8.4	431.0
合計特殊出生率	WDI & GDF	4.07	1.92	1.14	8.27
1/出生時平均余命	WDI & GDF	0.016	0.003	0.012	0.035
中学以上の平均就学年数	Barro and Lee (2012)	1.9	1.6	0.0	8.1
政体指標	Polity IV	6.1	3.4	0.0	10.0

資料) 筆者作成。

注1) WDI & GDF: World Bank, *World Development Indicator & Global Development Finance*, 2012, and Polity IV: Center for Systemic Peace, *Polity IV Dataset Version 2010*, 2011.

注2) データは、1960-65年(23)・1965-70年(39)・1970-75年(59)・1975-80年(67)・1980-85年(48)・1985-90年(56)・1990-95年(59)・1995-2000年(61)・2000-05年(120)・2005-2010年(119)の10期間からなるアンバランスドパネルデータである。括弧内は、観測数である。

図表4 一人当たり GDP 成長率と一人当たり GDP (自然対数値)



資料) 筆者作成。

最小二乗法で両者の関係を推定してみると、以下のような結果が得られた。

$$\text{一人当たり GDP 成長率} = 0.017^{***} + 0.0005 \text{ 一人当たり GDP (自然対数値)}$$

(3.08) (0.64)

観測数=651、自由度修正済み決定係数=-0.0009、F 値=0.41

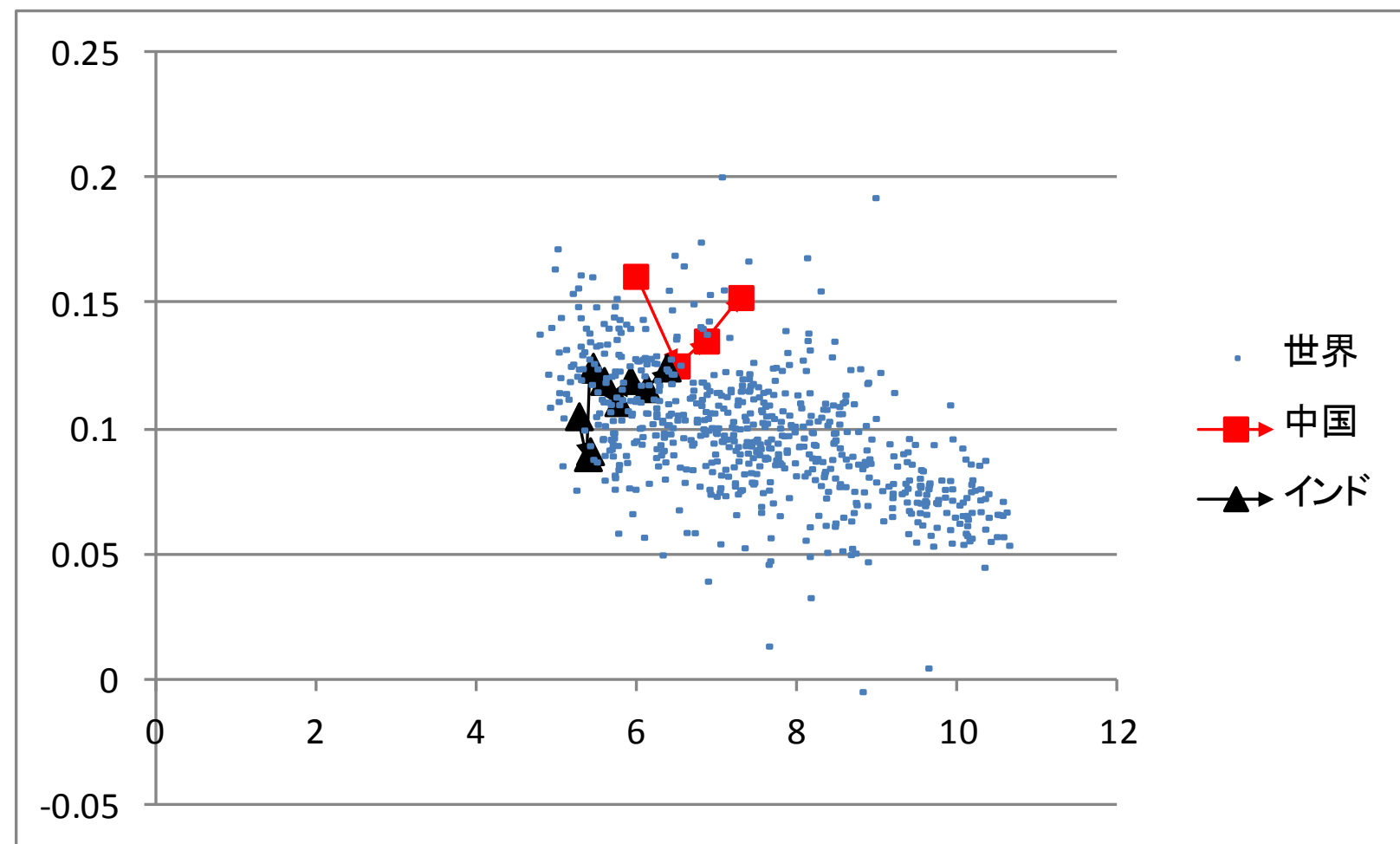
図表5 成長回帰分析の結果(被説明変数：1人当たりGDP成長率)

	係数	t値	
1人当たりGDP(自然対数値)	-0.0099864	-8.92	***
インフレ率	-0.0146363	-3.32	***
政府消費比率(%)	-0.0006852	-3.61	***
投資率(%)	0.0008134	5.50	***
交易条件の変化率(%)	0.1063879	6.28	***
貿易開放度(%)	0.0000580	2.68	***
合計特殊出生率	-0.0062061	-5.88	***
1/出生時平均余命	-2.3585640	-4.16	***
中学以上の平均就学年数	-0.0047676	-1.76	*
(中学以上の平均就学年数) ²	0.0008224	2.21	**
政体指標	-0.0025725	-1.75	*
(政体指標) ²	0.0002269	1.68	*
1965年ダミー	0.0049519	0.84	
1970年ダミー	-0.0024577	-0.44	
1975年ダミー	-0.0044683	-0.80	
1980年ダミー	-0.0294873	-5.05	***
1985年ダミー	-0.0183362	-3.16	***
1990年ダミー	-0.0239336	-4.15	***
1995年ダミー	-0.0212395	-3.66	***
2000年ダミー	-0.0164464	-2.88	***
2005年ダミー	-0.0246789	-4.31	***
定数項	0.1725384	9.68	***
観測数	651		
自由度修正済み決定係数	0.37		
F値	18.86	***	

資料) 筆者作成。

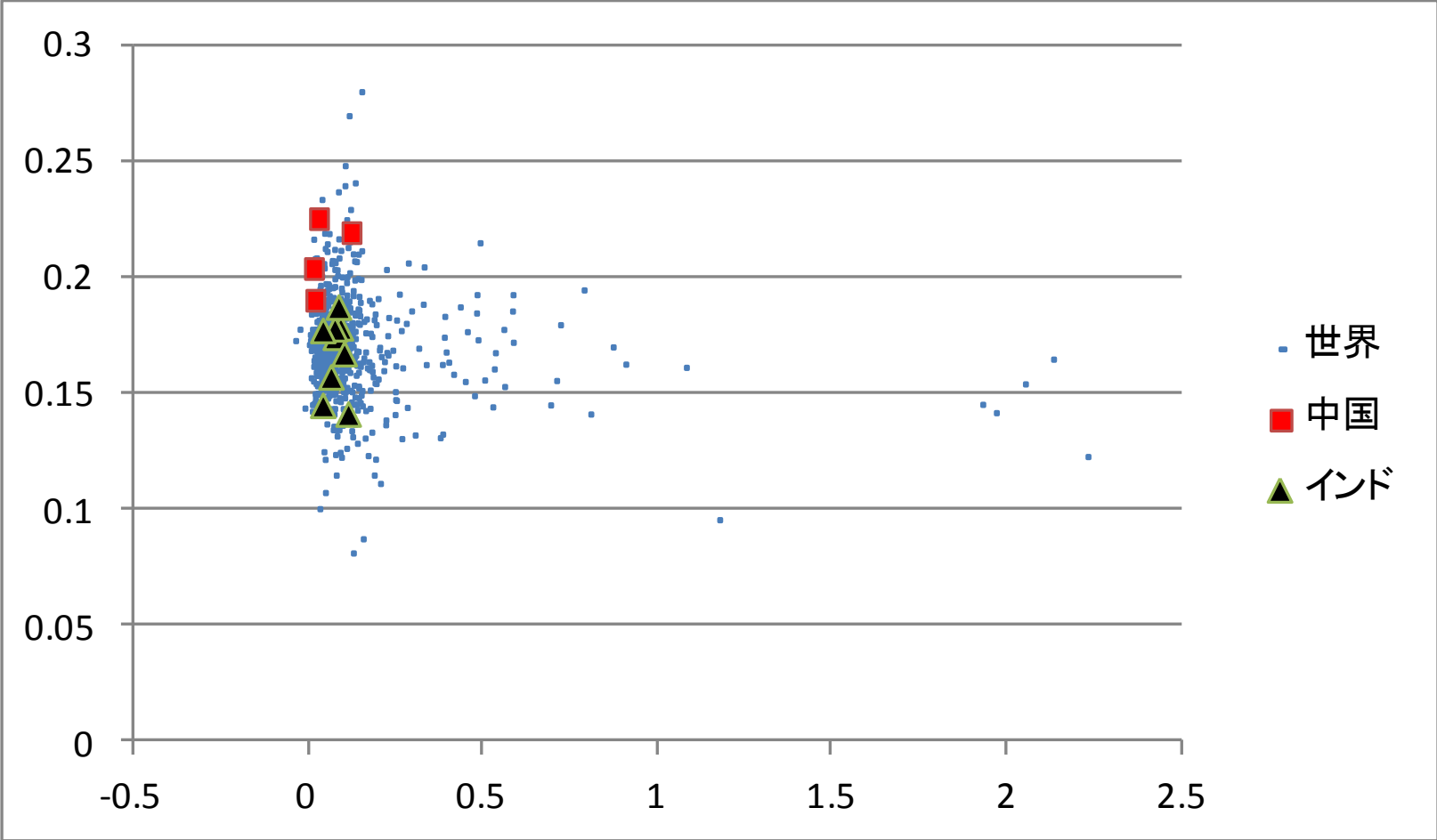
注1) 時間ダミーのレファレンスは、1960-65年ダミーである。1965年ダミーは1965-70年ダミーを簡略化した表現である。時間ダミーの表記については、以下同様である。

図表6 説明されない一人当たり GDP 成長率と一人当たり GDP (自然対数値)



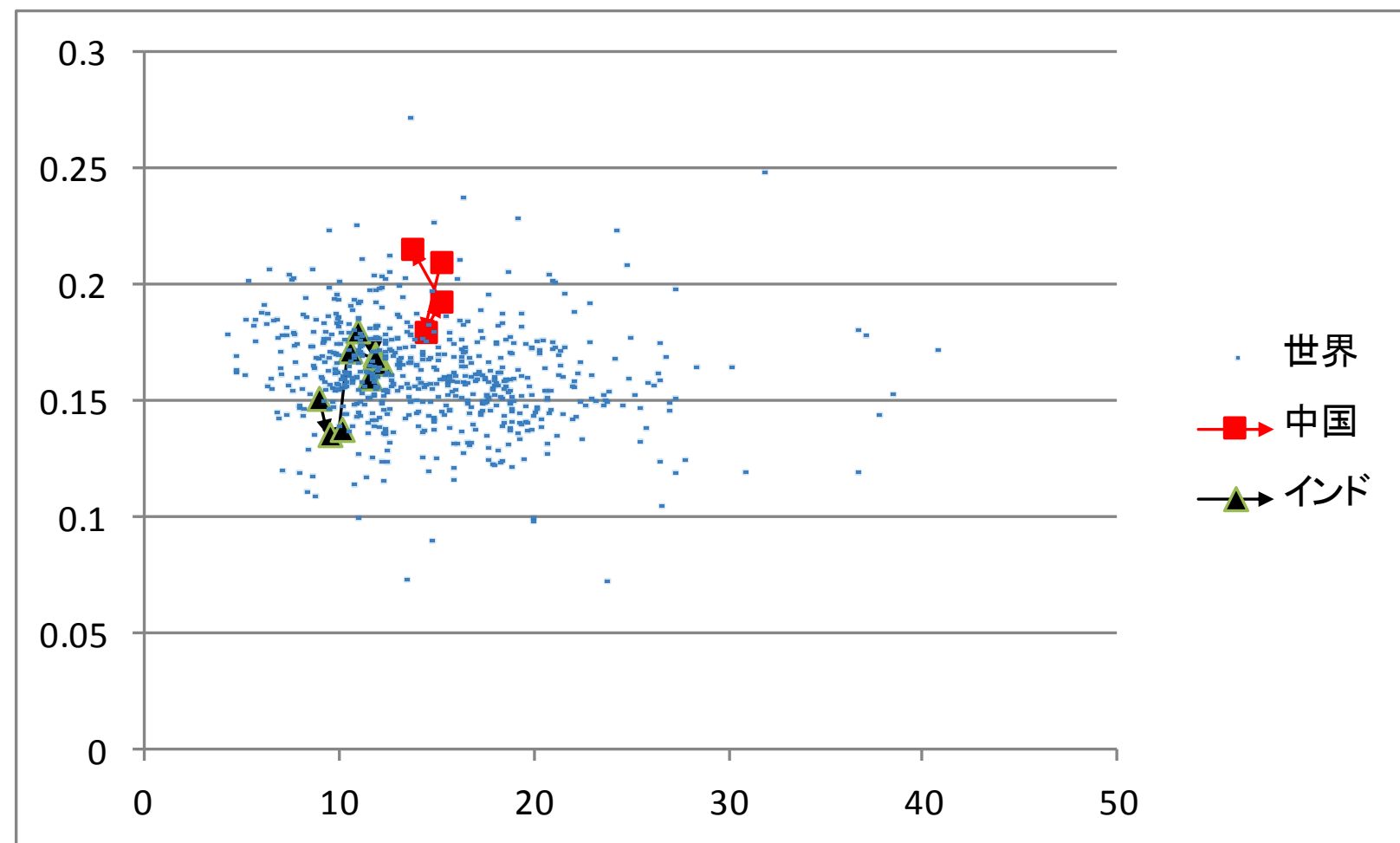
資料) 筆者作成。

図表7 説明されない一人当たり GDP 成長率とインフレ率



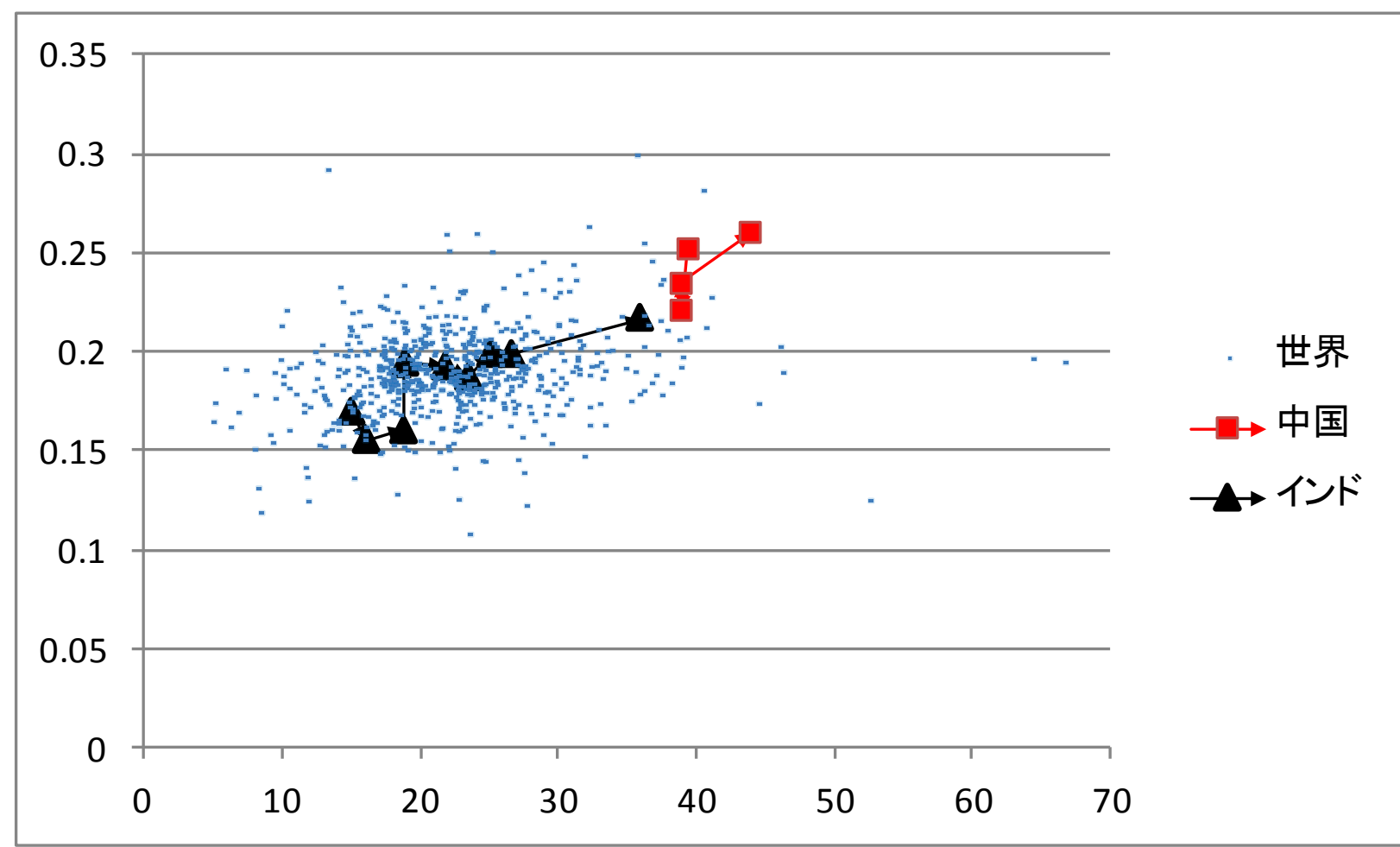
資料) 筆者作成。

図表 8 説明されない一人当たり GDP 成長率と政府消費比率(%)



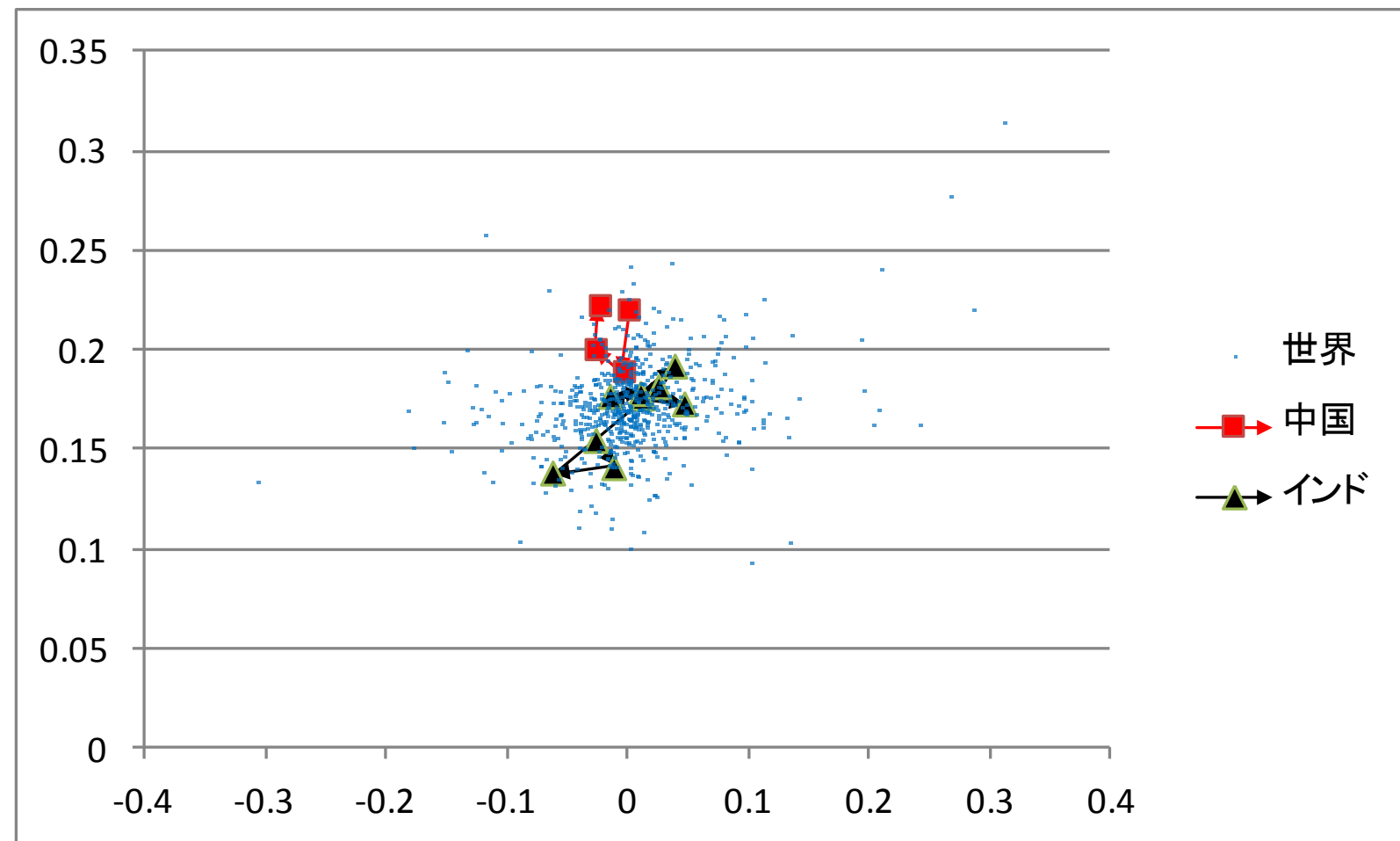
資料) 筆者作成。

図表9 説明されない一人当たり GDP 成長率と投資率(%)



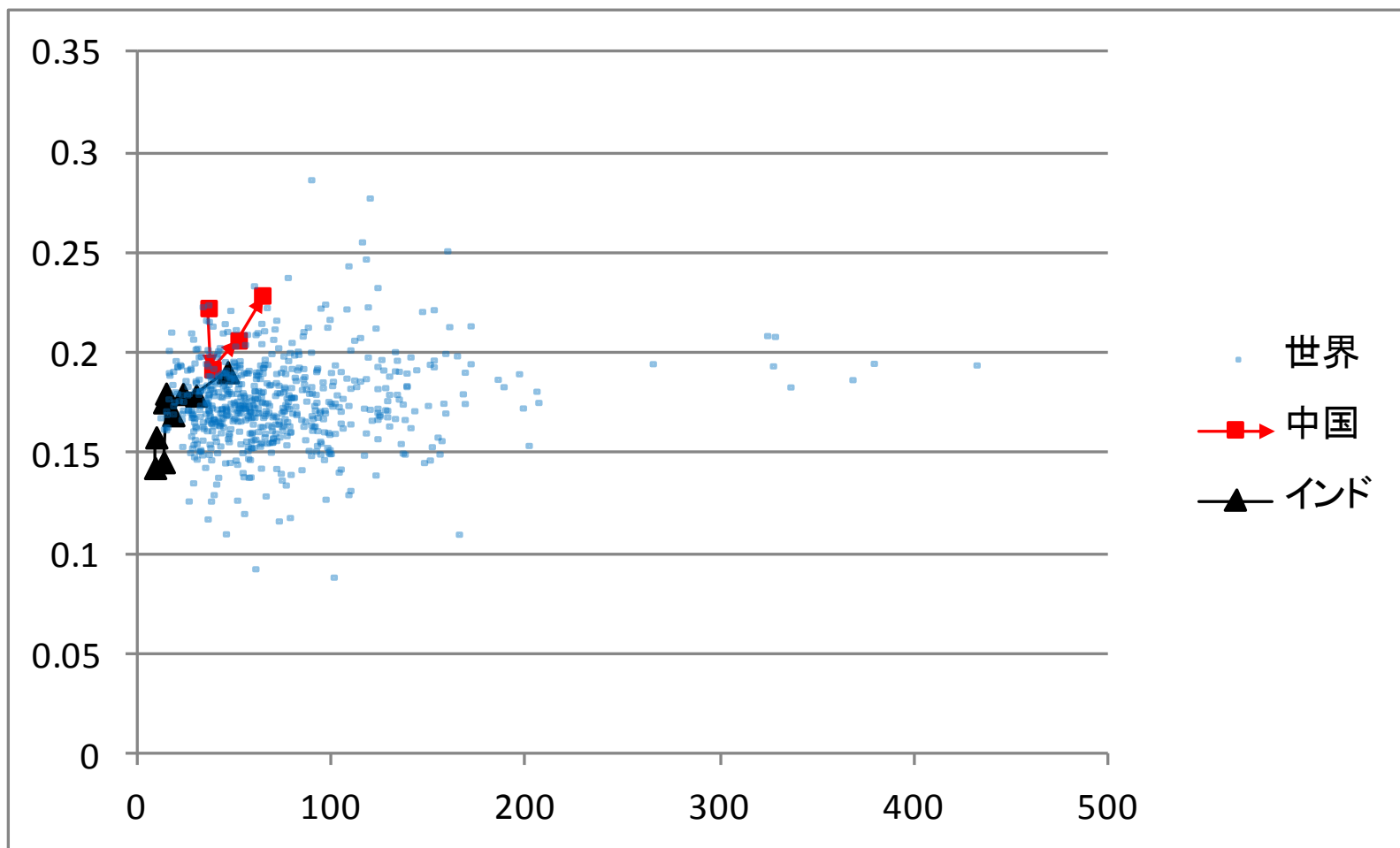
資料) 筆者作成。

図表 10 説明されない一人当たり GDP 成長率と交易条件の変化率(%)



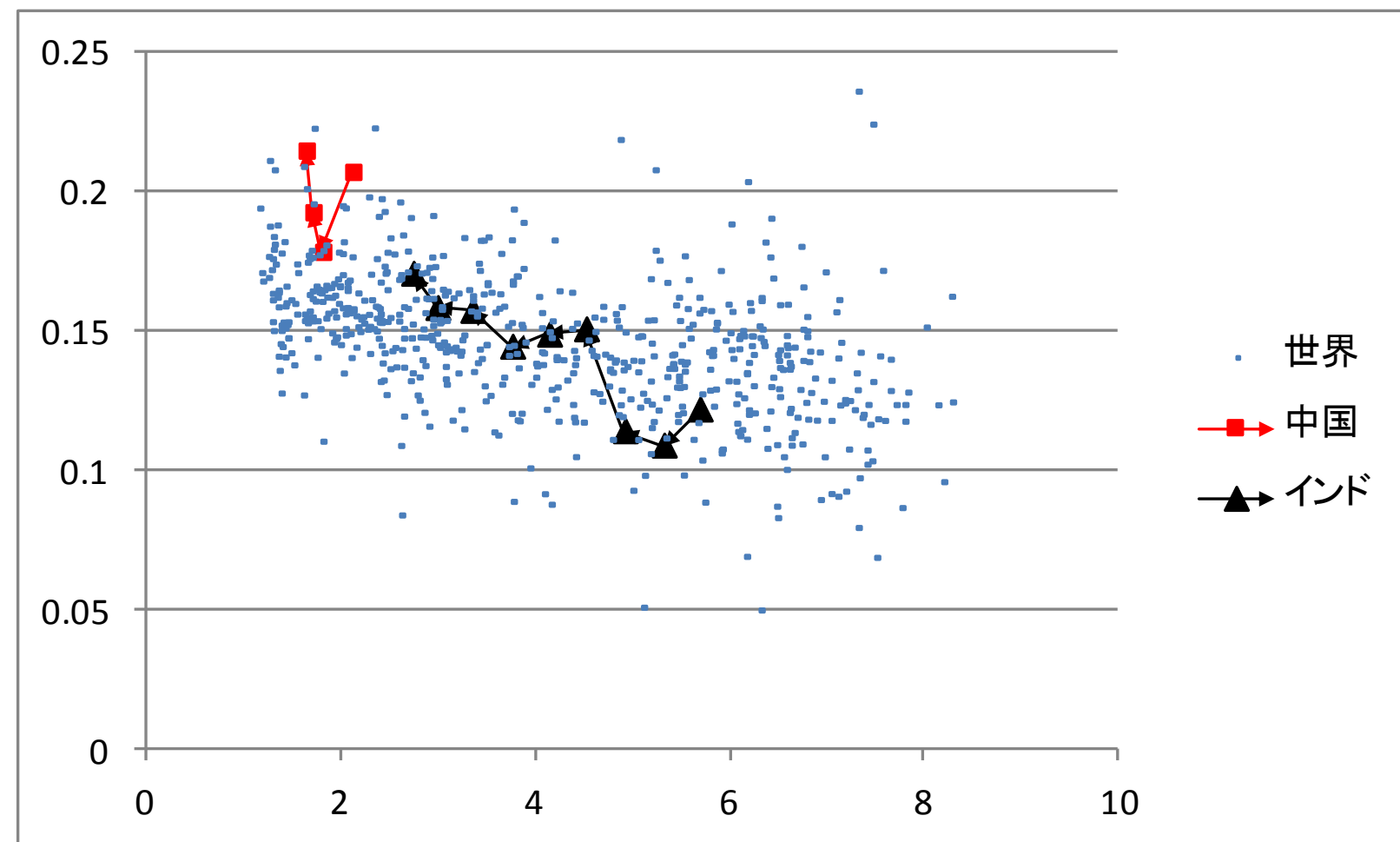
資料) 筆者作成。

図表 1 1 説明されない一人当たり GDP 成長率と貿易開放度(%)



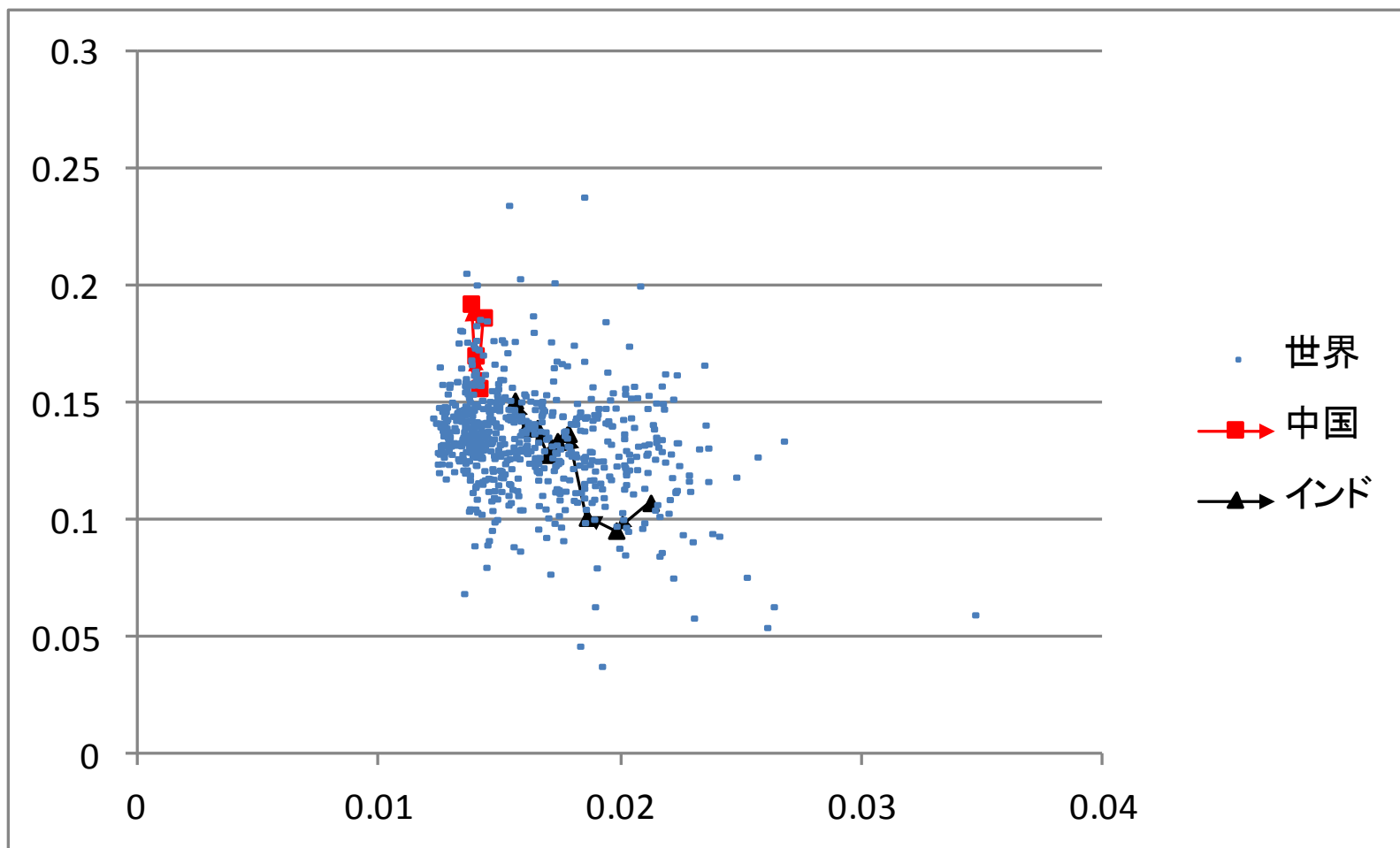
資料) 筆者作成。

図表 1 2 説明されない一人当たり GDP 成長率と合計特殊出生率



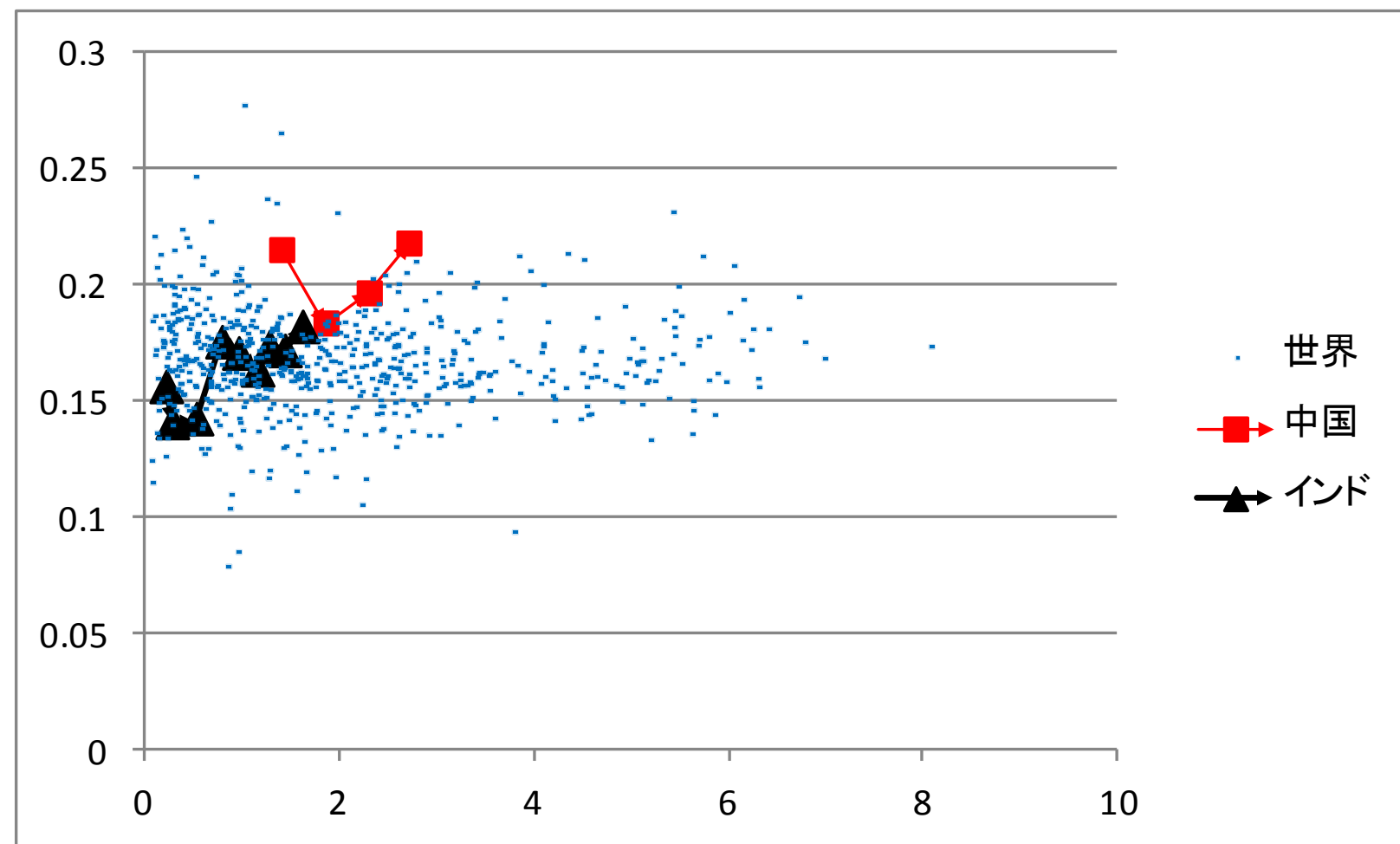
資料) 筆者作成。

図表 1 3 説明されない一人当たり GDP 成長率と出生時平均余命の逆数



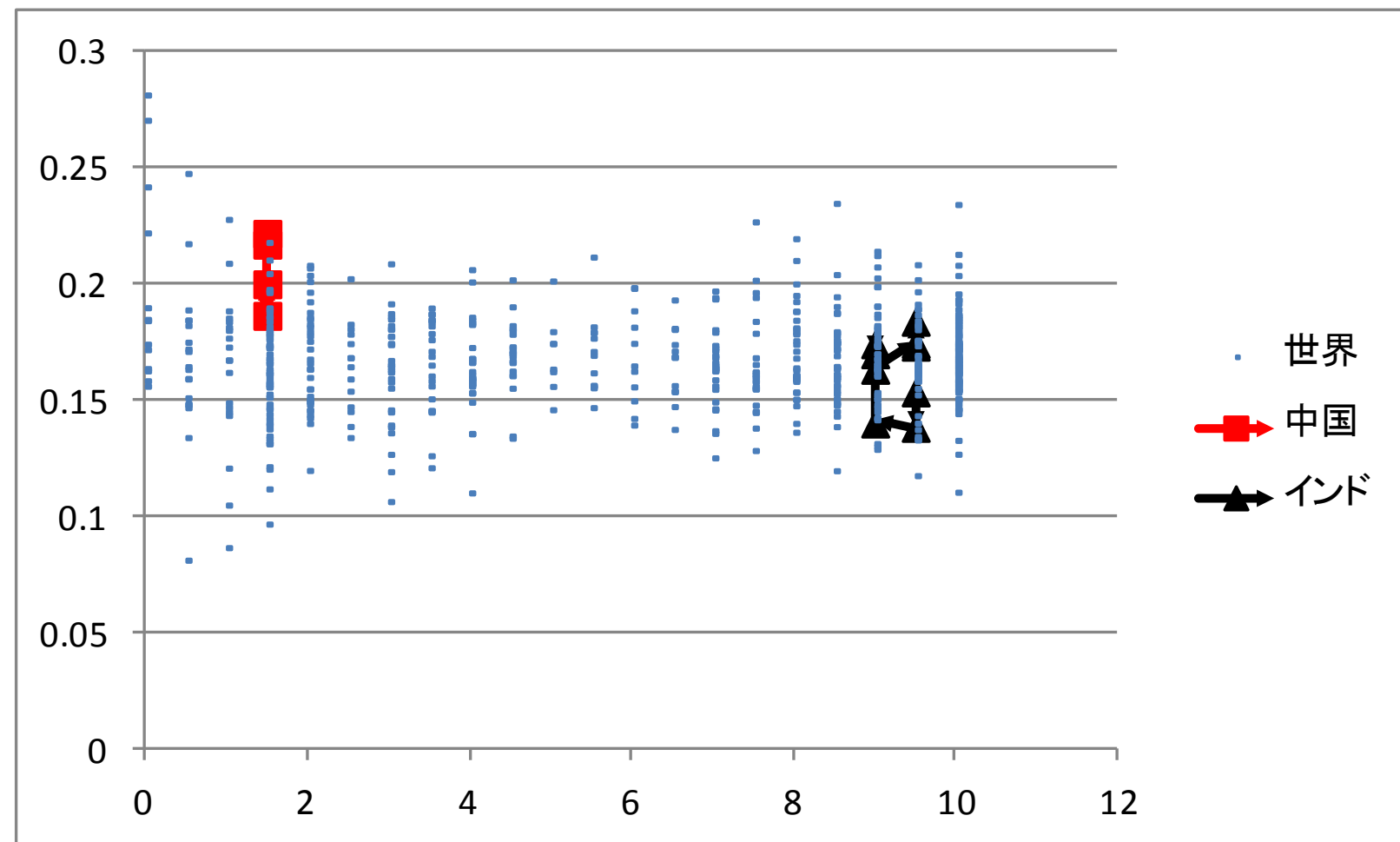
資料) 筆者作成。

図表 1 4 説明されない一人当たり GDP 成長率と中学以上の平均就学年数



資料) 筆者作成。

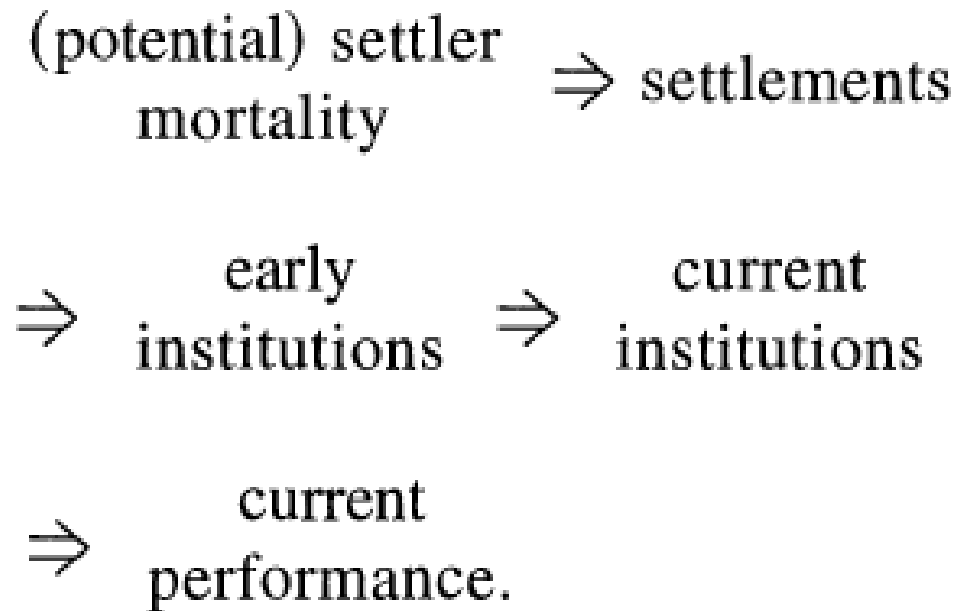
図表 1 5 説明されない一人当たり GDP 成長率と政体指標



資料) 筆者作成。

2 制度と長期経済成長

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5), 1369–1401.



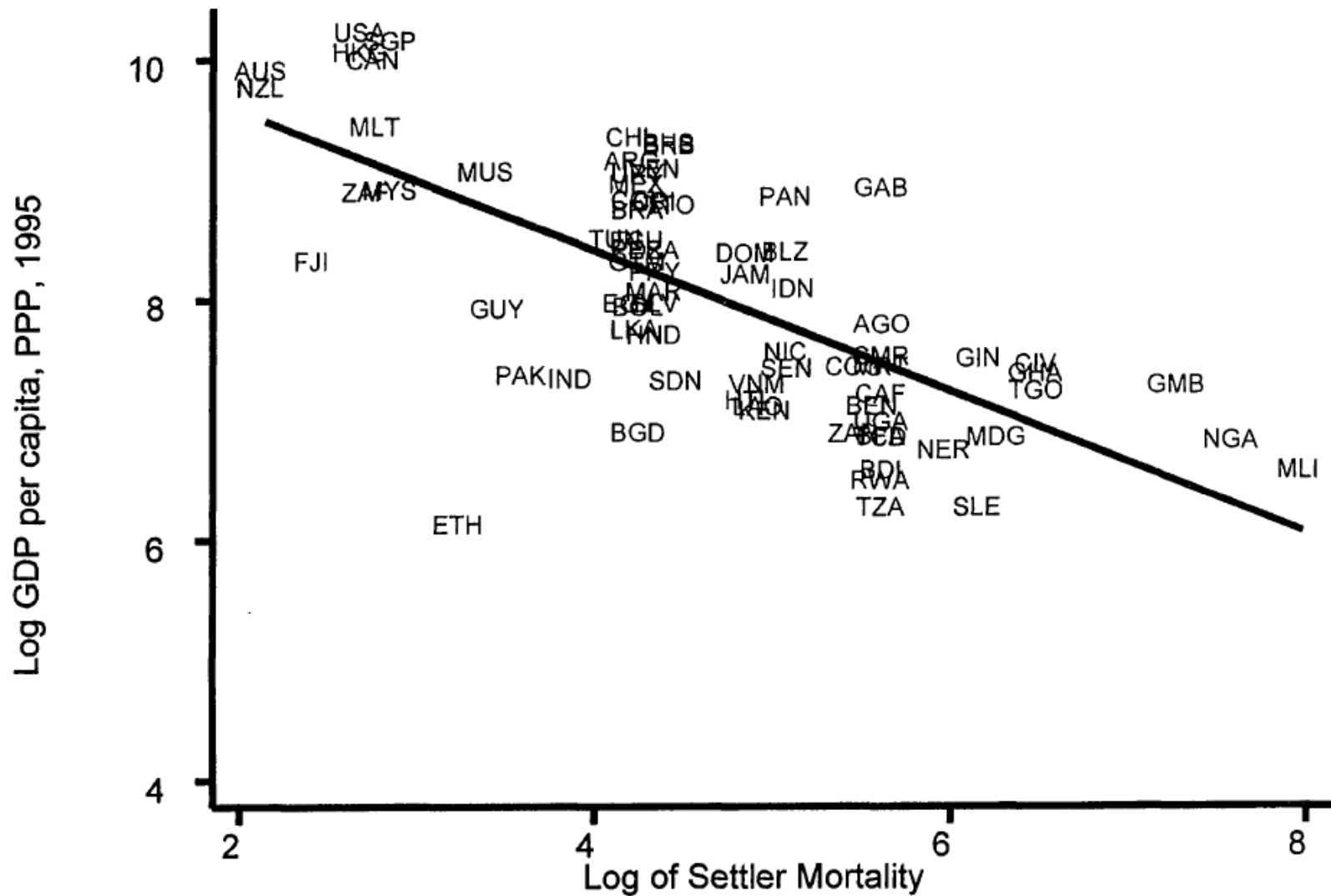


FIGURE 1. REDUCED-FORM RELATIONSHIP BETWEEN INCOME AND SETTLER MORTALITY

TABLE 1—DESCRIPTIVE STATISTICS

	Whole world	Base sample	By quartiles of mortality			
			(1)	(2)	(3)	(4)
Log GDP per capita (PPP) in 1995	8.3 (1.1)	8.05 (1.1)	8.9	8.4	7.73	7.2
Log output per worker in 1988 (with level of United States normalized to 1)	-1.70 (1.1)	-1.93 (1.0)	-1.03	-1.46	-2.20	-3.03
Average protection against expropriation risk, 1985–1995	7 (1.8)	6.5 (1.5)	7.9	6.5	6	5.9
Constraint on executive in 1990	3.6 (2.3)	4 (2.3)	5.3	5.1	3.3	2.3
Constraint on executive in 1900	1.9 (1.8)	2.3 (2.1)	3.7	3.4	1.1	1
Constraint on executive in first year of independence	3.6 (2.4)	3.3 (2.4)	4.8	2.4	3.1	3.4
Democracy in 1900	1.1 (2.6)	1.6 (3.0)	3.9	2.8	0.19	0
European settlements in 1900	0.31 (0.4)	0.16 (0.3)	0.32	0.26	0.08	0.005
Log European settler mortality	n.a.	4.7 (1.1)	3.0	4.3	4.9	6.3
Number of observations	163	64	14	18	17	15

Notes: Standard deviations are in parentheses. Mortality is potential settler mortality, measured in terms of deaths per annum per 1,000 “mean strength” (raw mortality numbers are adjusted to what they would be if a force of 1,000 living people were kept in place for a whole year, e.g., it is possible for this number to exceed 1,000 in episodes of extreme mortality as those who die are replaced with new arrivals). Sources and methods for mortality are described in Section III, subsection B, and in the unpublished Appendix (available from the authors; or see Acemoglu et al., 2000). Quartiles of mortality are for our base sample of 64 observations. These are: (1) less than 65.4; (2) greater than or equal to 65.4 and less than 78.1; (3) greater than or equal to 78.1 and less than 280; (4) greater than or equal to 280. The number of observations differs by variable; see Appendix Table A1 for details.

Log GDP per capita, 1975 and 1995: Purchasing Power Parity Basis, from World Bank, World Development Indicators, CD-Rom, 1999.

Log output per worker, 1988: As used in Hall and Jones (1999), from www.stanford.edu/~chadj.

Average protection against expropriation risk, 1985–1995: Risk of expropriation of private foreign investment by government, from 0 to 10, where a higher score means less risk. Mean value for all years from 1985 to 1995. This data was previously used by Knack and Keefer (1995) and was organized in electronic form by the IRIS Center (University of Maryland); originally Political Risk Services.

Constraint on executive in 1900, 1970, 1990 and in first year of independence: Seven-category scale, from 1 to 7, with a higher score indicating more constraints. Score of 1 indicates unlimited authority; score of 3 indicates slight to moderate limitations; score of 5 indicates substantial limitations; score of 7 indicates executive parity or subordination. Equal to 1 if country was not independent at that date. Date of independence is the first year that the country appears in the Polity III data set. From the Polity III data set, downloaded from Inter-University Consortium for Political and Social Research. See Gurr (1997).

Democracy in 1900 and first year of independence: An 11-category scale, from 0 to 10, with a higher score indicating more democracy. Points from three dimensions: Competitiveness of Political Participation (from 1 to 3); Competitiveness of Executive Recruitment (from 1 to 2, with a bonus of 1 point if there is an election); and Constraints on Chief Executive (from 1 to 4). Equal to 1 if country not independent at that date. From the Polity III data set. See Gurr (1997). European settlements in 1900 and percent of European descent 1975: Percent of population European or of European descent in 1900 and 1975. From McEvedy and Jones (1975) and other sources listed in Appendix Table A6 (available from the authors).

Ethnolinguistic fragmentation: Average of five different indices of ethnolinguistic fragmentation. Easterly and Levine (1997), as used in La Porta et al. (1999).

Religion variables: Percent of population that belonged to the three most widely spread religions of the world in 1980 (or for 1990–1995 for countries formed more recently). The four classifications are: Roman Catholic, Protestant, Muslim, and “other.” From La Porta et al. (1999).

French legal origin dummy: Legal origin of the company law or commercial code of each country. Our base sample is all French Commercial Code or English Common Law Origin. From La Porta et al. (1999).

Colonial dummies: Dummy indicating whether country was a British, French, German, Spanish, Italian, Belgian, Dutch, or Portuguese colony. From La Porta et al. (1999).

Temperature variables: Average temperature, minimum monthly high, maximum monthly high, minimum monthly low, and maximum monthly low, all in centigrade. From Parker (1997).

Mean temperature: 1987 mean annual temperature in degrees Celsius. From McArthur and Sachs (2001).

Humidity variables: Morning minimum, morning maximum, afternoon minimum, and afternoon maximum, all in percent. From Parker (1997).

Soil quality: Dummies for steppe (low latitude), desert (low latitude), steppe (middle latitude), desert (middle latitude), dry steppe wasteland, desert dry winter, and highland. From Parker (1997).

Natural resources: Percent of world gold reserves today, percent of world iron reserves today, percent of world zinc reserves today, number of minerals present in country, and oil resources (thousands of barrels per capita.) From Parker (1997).

Dummy for landlocked: Equal to 1 if country does not adjoin the sea. From Parker (1997).

Malaria in 1994: Population living where falciporun malaria is endemic (percent). Gallup and Sachs (1998).

Latitude: Absolute value of the latitude of the country (i.e., a measure of distance from the equator), scaled to take values between 0 and 1, where 0 is the equator. From La Porta et al. (1999).

Log European settler mortality: See Appendix Table A2, reproduced below, and Appendix B (available from the authors).

Yellow fever: Dummy equal to 1 if yellow fever epidemics before 1900 and 0 otherwise. Oldstone (1998 p. 69) shows current habitat of the mosquito vector; these countries are coded equal to 1. In addition, countries in which there were epidemics in the nineteenth century, according to Curtin (1989, 1998) are also coded equal to 1.

Infant mortality: Infant mortality rate (deaths per 1,000 live births). From McArthur and Sachs (2001).

Life expectancy: Life expectancy at birth in 1995. From McArthur and Sachs (2001).

Distance from the coast: Proportion of land area within 100 km of the seacoast. From McArthur and Sachs (2001).

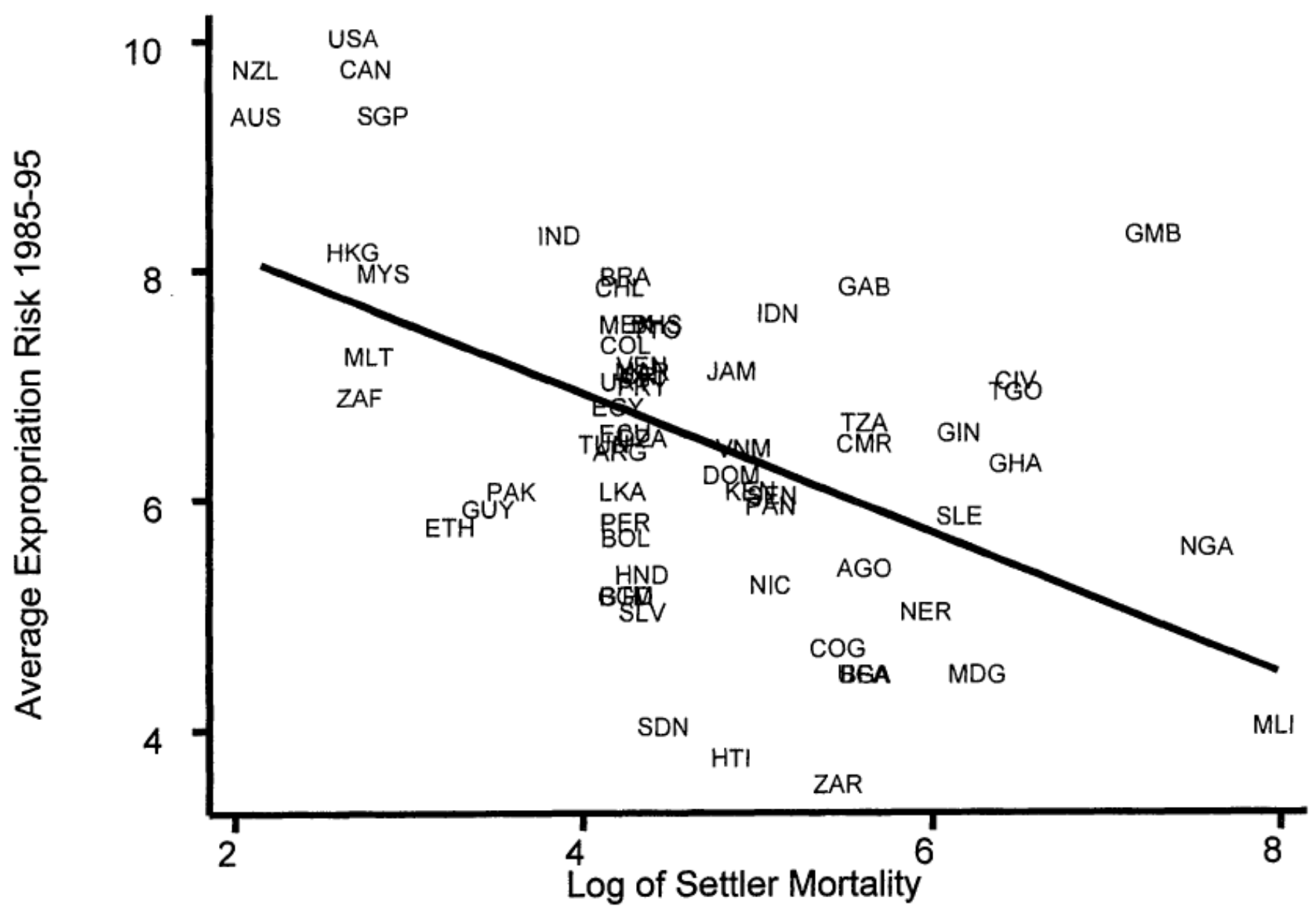


FIGURE 3. FIRST-STAGE RELATIONSHIP BETWEEN SETTLER MORTALITY AND EXPROPRIATION RISK

TABLE 4—IV REGRESSIONS OF LOG GDP PER CAPITA

	Base sample (1)	Base sample (2)	Base sample without Neo-Europes (3)	Base sample without Neo-Europes (4)	Base sample without Africa (5)	Base sample without Africa (6)	Base sample with continent dummies (7)	Base sample with continent dummies (8)	Base sample, dependent variable is log output per worker (9)
Panel A: Two-Stage Least Squares									
Average protection against expropriation risk 1985–1995	0.94 (0.16)	1.00 (0.22)	1.28 (0.36)	1.21 (0.35)	0.58 (0.10)	0.58 (0.12)	0.98 (0.30)	1.10 (0.46)	0.98 (0.17)
Latitude		−0.65 (1.34)		0.94 (1.46)		0.04 (0.84)		−1.20 (1.8)	
Asia dummy							−0.92 (0.40)	−1.10 (0.52)	
Africa dummy							−0.46 (0.36)	−0.44 (0.42)	
“Other” continent dummy							−0.94 (0.85)	−0.99 (1.0)	

Panel B: First Stage for Average Protection Against Expropriation Risk in 1985–1995

Log European settler mortality	-0.61 (0.13)	-0.51 (0.14)	-0.39 (0.13)	-0.39 (0.14)	-1.20 (0.22)	-1.10 (0.24)	-0.43 (0.17)	-0.34 (0.18)	-0.63 (0.13)
Latitude		2.00 (1.34)		-0.11 (1.50)		0.99 (1.43)		2.00 (1.40)	
Asia dummy							0.33 (0.49)	0.47 (0.50)	
Africa dummy							-0.27 (0.41)	-0.26 (0.41)	
“Other” continent dummy							1.24 (0.84)	1.1 (0.84)	
R^2	0.27	0.30	0.13	0.13	0.47	0.47	0.30	0.33	0.28

Panel C: Ordinary Least Squares

Average protection against expropriation risk 1985–1995	0.52 (0.06)	0.47 (0.06)	0.49 (0.08)	0.47 (0.07)	0.48 (0.07)	0.47 (0.07)	0.42 (0.06)	0.40 (0.06)	0.46 (0.06)
Number of observations	64	64	60	60	37	37	64	64	61

Notes: The dependent variable in columns (1)–(8) is log GDP per capita in 1995, PPP basis. The dependent variable in column (9) is log output per worker, from Hall and Jones (1999). “Average protection against expropriation risk 1985–1995” is measured on a scale from 0 to 10, where a higher score means more protection against risk of expropriation of investment by the government, from Political Risk Services. Panel A reports the two-stage least-squares estimates, instrumenting for protection against expropriation risk using log settler mortality; Panel B reports the corresponding first stage. Panel C reports the coefficient from an OLS regression of the dependent variable against average protection against expropriation risk. Standard errors are in parentheses. In regressions with continent dummies, the dummy for America is omitted. See Appendix Table A1 for more detailed variable descriptions and sources.

Abhijit Banerjee and Lakshmi Iyer (2005), History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India, *The American Economic Review*, Vol. 95, No. 4 (Sep., 2005), pp. 1190-1213

TABLE 1—STATE-WISE DISTRIBUTION OF LANDLORD AND NON-LANDLORD DISTRICTS

State	Mean non-landlord proportion	Classification of revenue systems				Total districts
		Landlord based	Individual based	Village bodies		
				Landlord	Non-landlord	
Andhra Pradesh	0.66	2	8	0	0	10
Bihar	0.00	12	0	0	0	12
Gujarat	1.00	0	7	0	0	7
Haryana	0.85	0	0	0	5	5
Karnataka	1.00	0	15	0	0	15
Madhya Pradesh	0.10	14	1	0	0	15
Maharashtra	0.78	4	14	0	0	18
Orissa	0.32	6	2	0	0	8
Punjab	0.87	0	0	0	6	6
Rajasthan	0.00	1	0	0	0	1
Tamil Nadu	0.75	2	9	0	0	11
Uttar Pradesh	0.42	0	0	12	35	47
West Bengal	0.00	11	0	0	0	11
Total	0.51	52	56	12	46	166

Notes: This table lists only districts that used to be part of British India. Areas where the British did not set up the land revenue system are excluded. Districts of British India currently in Pakistan, Bangladesh, or Burma are excluded. The table also excludes the states of Assam and Kerala, for which agricultural data are not available in the World Bank dataset. The table lists 1960 districts, some of which were split into two or more districts over time. We use unsplit districts in all our analyses.

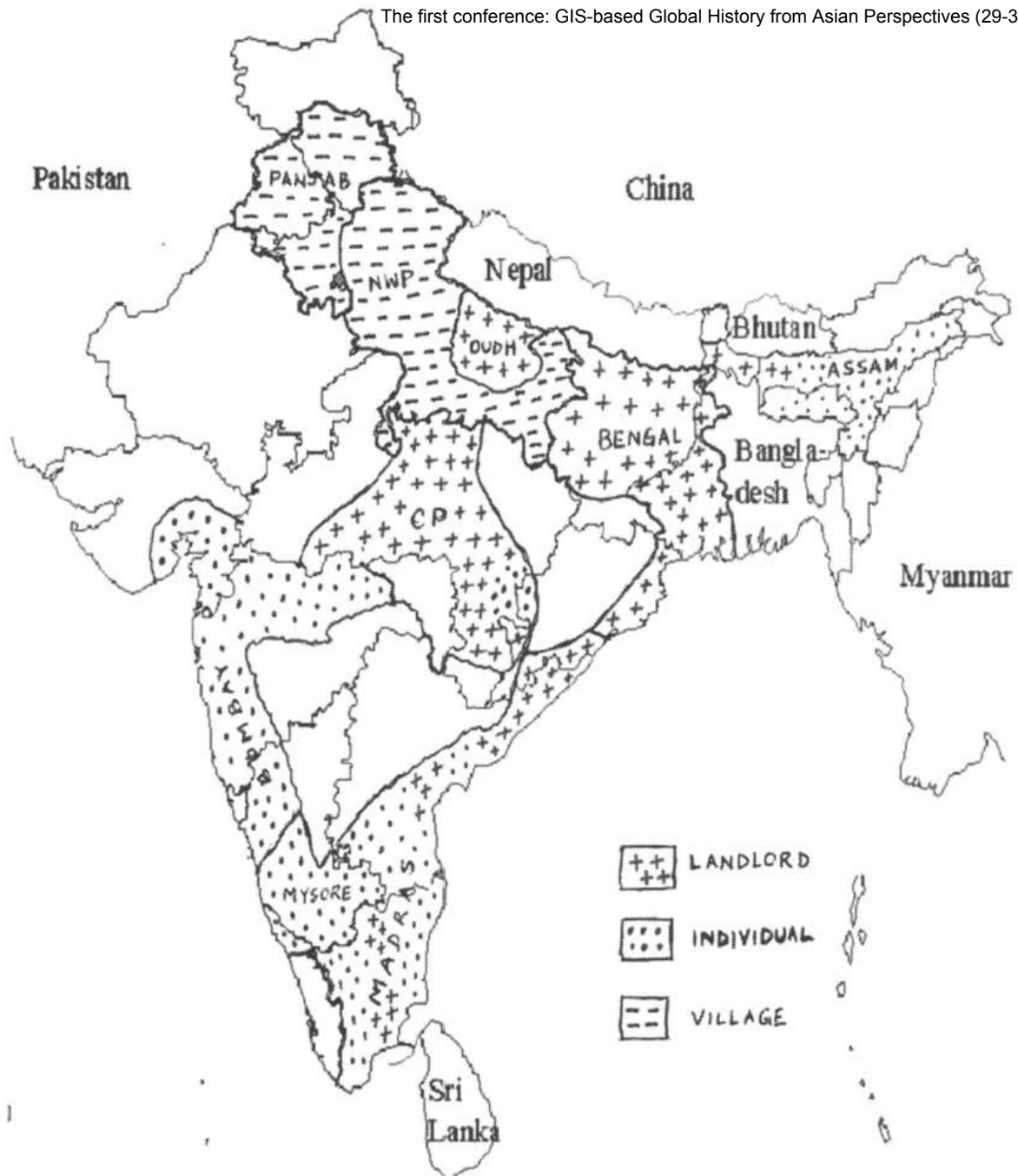


FIGURE 1. MAP OF INDIA

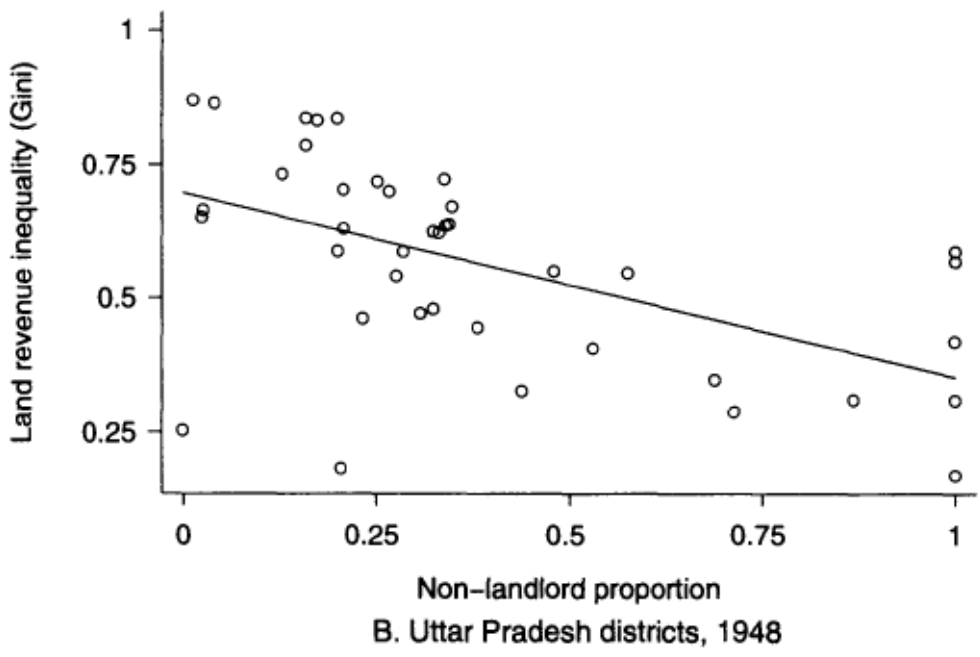
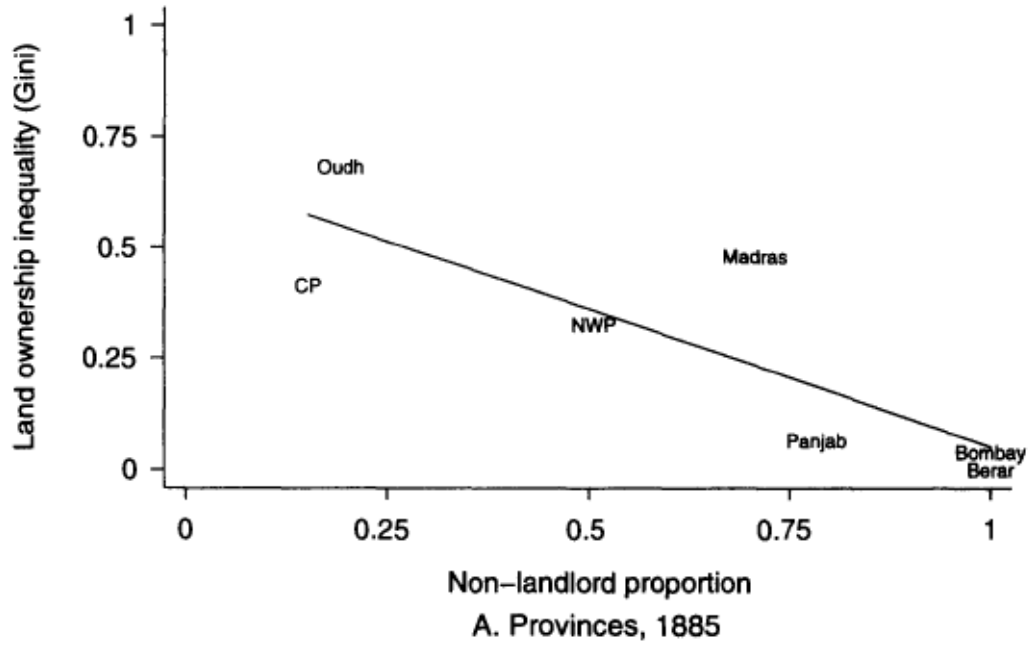


FIGURE 2. LAND TENURE AND LAND INEQUALITY

	Mean	Standard deviation	Difference ^a	Standard error of difference
<i>Geography</i>				
Latitude	22.19	5.60	−4.35***	(0.961)
Altitude	366.41	148.14	93.64***	(25.98)
Mean annual rainfall (mm)	1263.09	471.64	373.99***	(80.83)
Coastal dummy	0.1497	0.3579	0.084	(0.065)
<i>Top 2 soil types</i>				
Black soil	0.2096	0.4082	0.244***	(0.072)
Alluvial soil	0.1677	0.3747	−0.135**	(0.067)
Red soil	0.5689	0.4967	0.075	(0.090)
<i>Top-soil depth</i>				
<25 cm	0.0181	0.1336	0.016	(0.024)
25–50 cm	0.1145	0.3193	−0.076	(0.058)
50–100 cm	0.2289	0.4214	0.193	(0.075)
100–300 cm	0.0904	0.2876	0.135***	(0.051)
>300 cm	0.5482	0.4991	−0.268***	(0.088)
<i>Area share of various crops: 1956–1987</i>				
Area share of rice	0.366	0.298	−0.194***	(0.054)
Area share of wheat	0.149	0.157	−0.058**	(0.026)
Area share of other cereals	0.205	0.172	0.128***	(0.031)
Area share of oilseeds	0.067	0.088	0.065***	(0.013)
Area share of cotton	0.041	0.096	0.066***	(0.018)
Area share of tobacco	0.003	0.015	0.005**	(0.002)
Area share of sugarcane	0.031	0.053	0.005	(0.008)
Cash crops-to-cereals ratio	0.149	0.257	0.152***	(0.048)
<i>Demographics: 1961, 1971, 1981, 1991</i>				
Log (Population)	14.26	0.634	−0.088	(0.109)
Population density	36.44	85.92	−11.22**	(4.02)
Proportion of scheduled castes	0.1598	0.0733	−0.034**	(0.014)
Proportion of scheduled tribes	0.0980	0.1630	−0.010	(0.031)
Proportion rural	0.8102	0.1237	−0.066***	(0.023)
Proportion of working population in farming	0.7119	0.1352	−0.050*	(0.027)

Notes: Standard errors in parentheses, corrected for district-level clustering. * Significant at 10-percent level; ** significant at 5-percent level; *** significant at 1-percent level. For the area under different crops and demographics, the difference is calculated after controlling for year fixed effects.

^a Difference represents the average difference between non-landlord and landlord districts, computed as the regression coefficient on the non-landlord proportion.

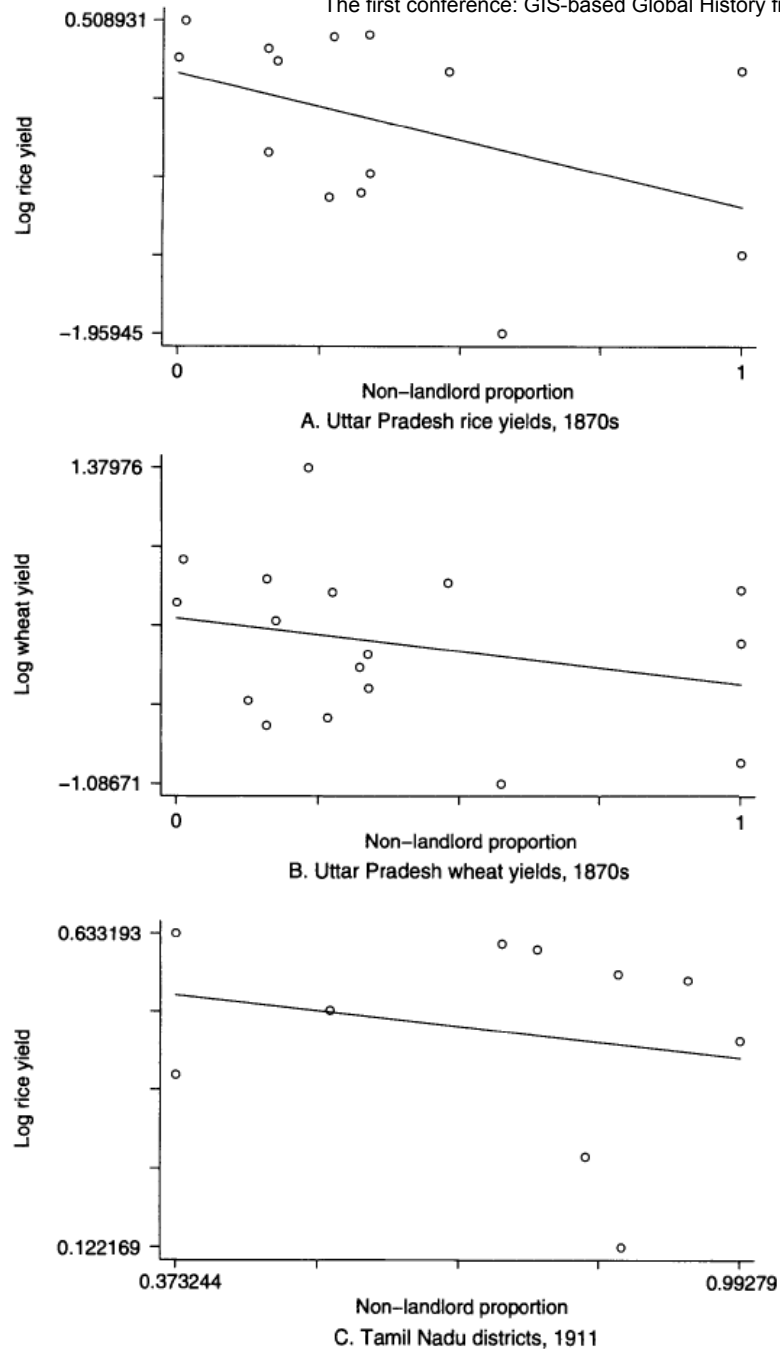


FIGURE 3. AGRICULTURAL YIELDS IN COLONIAL PERIOD

TABLE 3—DIFFERENCES IN AGRICULTURAL INVESTMENTS AND YIELDS

(Mean non-landlord proportion = 0.5051 (s.d. = 0.4274))

Dependent variable	Mean of dependent variable	Coefficient on non-landlord proportion		Coefficient on non-landlord dummy	
		OLS Full sample (1)	OLS Excluding Bengal and Bihar (2)	OLS Full sample (3)	OLS Excluding village-based districts (4)
<i>Agricultural investments</i>					
Proportion of gross cropped area irrigated	0.276	0.065* (0.034)	0.066* (0.035)	0.077*** (0.027)	0.005 (0.032)
Fertilizer use (kg/ha)	24.64	10.708*** (3.345)	10.992*** (3.406)	9.988*** (2.301)	10.695*** (3.040)
Proportion of rice area under HYV	0.298	0.079* (0.044)	0.094** (0.043)	0.016 (0.032)	0.074* (0.038)
Proportion of wheat area under HYV	0.518	0.092** (0.046)	0.119*** (0.045)	0.031 (0.036)	0.107** (0.052)
Proportion of other cereals area under HYV	0.196	0.057* (0.031)	0.084*** (0.024)	-0.035 (0.025)	0.109*** (0.041)
<i>Agricultural productivity</i>					
log (yield of 15 major crops)		0.157** (0.071)	0.152** (0.074)	0.173*** (0.053)	0.089 (0.085)
log (rice yield)		0.171** (0.081)	0.195** (0.081)	0.099 (0.062)	0.173** (0.079)
log (wheat yield)		0.229*** (0.067)	0.228*** (0.070)	0.188*** (0.054)	0.143 (0.098)
No. of districts		166	143	166	109
Year fixed effects		YES	YES	YES	YES
Geographic controls		YES	YES	YES	YES
Date of British land revenue control		YES	YES	YES	YES

Notes: Standard errors in parentheses, corrected for district-level clustering. * Significant at 10-percent level; ** significant at 5-percent level; *** significant at 1-percent level. Each cell represents the coefficient from a regression of the dependent variable on the measure of non-landlord control. Data are from 1956 to 1987. Data for area under high-yielding varieties (HYV) is after 1965. Geographic controls are altitude, latitude, mean annual rainfall, and dummies for soil type and coastal regions. The non-landlord dummy is assigned as follows: the dummy equals one for all individual-based districts and all village-based districts except those in Oudh. For landlord-based districts and the village-based districts of Oudh, the dummy is zero.

Panel A: Robustness checks

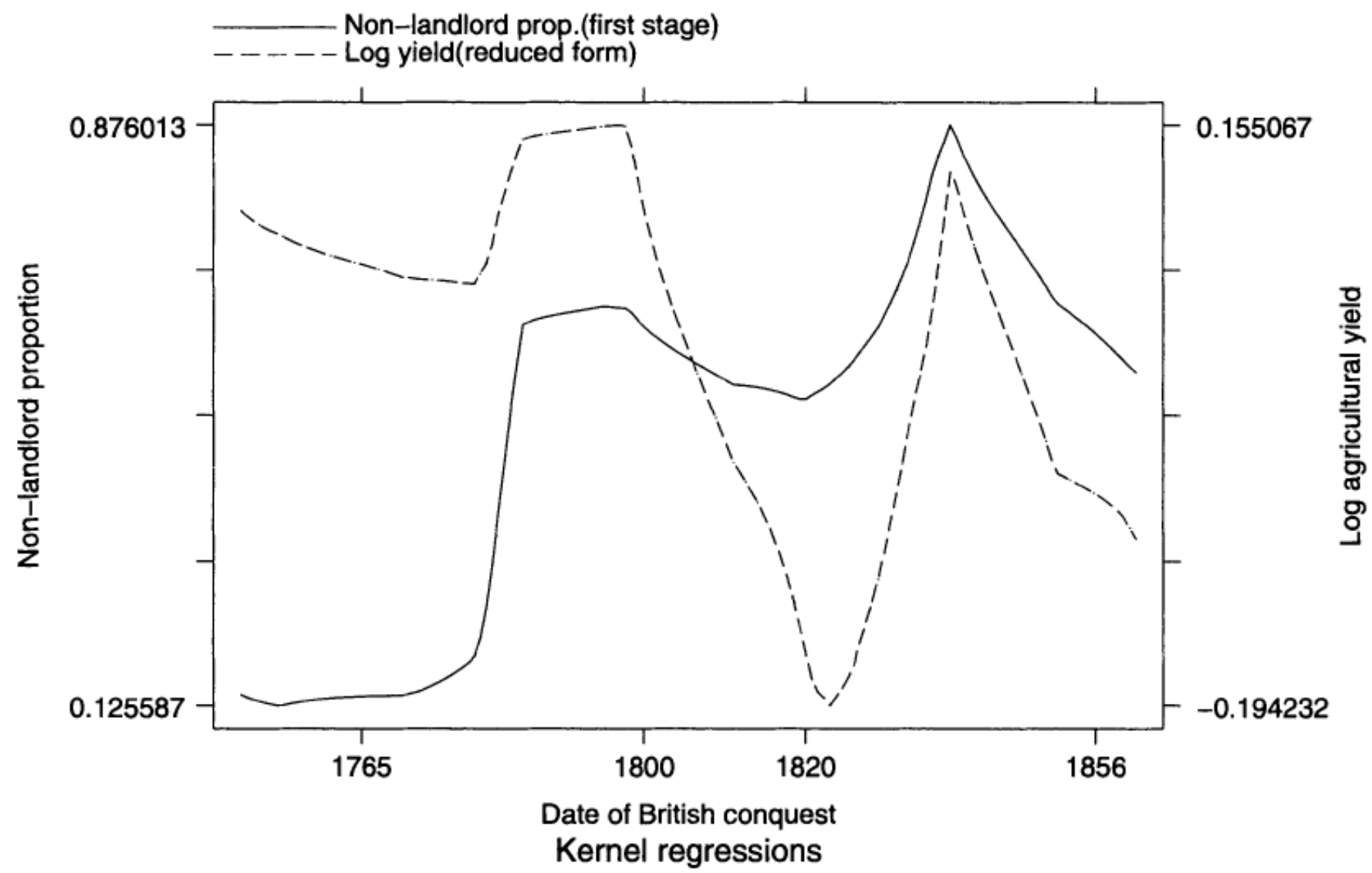
Dependent variable	Coefficient on non-landlord proportion	
	OLS Neighbors only (1)	IV Full sample (2)
<i>Agricultural investments</i>		
Proportion of gross cropped area irrigated	0.101** (0.041)	0.216 (0.137)
Fertilizer use (kg/ha)	10.589** (4.979)	26.198** (13.244)
Proportion of rice area under HYV	-0.015 (0.083)	0.411** (0.163)
Proportion of wheat area under HYV	0.078** (0.034)	0.584*** (0.163)
Proportion of other cereals area under HYV	-0.025 (0.024)	0.526*** (0.129)
<i>Agricultural productivity</i>		
log (yield of 15 major crops)	0.145** (0.061)	0.409 (0.261)
log (rice yield)	0.126 (0.098)	0.554* (0.285)
log (wheat yield)	0.253*** (0.084)	0.706*** (0.214)
No. of districts	35	166
Year fixed effects	YES	YES
Geographic controls	YES	YES
Date of British land revenue control	YES	YES

Panel B: First-stage regressions for IV

Dependent variable: Non-landlord proportion

Coefficient on	(1)	(2)	(3)
Instrument (=1 if date of British revenue control is between 1820 and 1856)	0.331*** (0.086)	0.430*** (0.092)	0.419*** (0.087)
<i>R</i> -squared	0.40	0.43	0.63
No. of observations	166	166	166
Geographic controls	YES	YES	YES
Date of British land revenue control	YES	YES	YES
Date of British land revenue control squared	NO	YES	NO
State fixed effects	NO	NO	YES

Notes: Standard errors in parentheses, corrected for district-level clustering. * Significant at 10-percent level; ** significant at 5-percent level; *** significant at 1-percent level. Each cell in Panel A represents the coefficient from a regression of the dependent variable on the non-landlord proportion. Data are from 1956–1987. Data for area under high-yielding varieties (HYV) is after 1965. Geographic controls are altitude, latitude, mean annual rainfall, and dummies for soil type and coastal regions. Instrument is a dummy that equals one if the date of British revenue control is after 1820 and before 1856.



おわりに

- ベンチマークとしての新古典派経済成長モデル
- 条件付き収束と総要素生産性 (TFP)
- 制度と長期経済成長 → 空間と歴史の重要性

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