

TABLE 2: Farm-size productivity differences, selected countries

Farm size <sup>a</sup>	Northeast Brazil <sup>b</sup>	Punjab, Pakistan <sup>c</sup>	Muda, Malaysia <sup>d</sup>
Small farm (hectares)	563 (10.0-49.9)	274 (5.1-10.1)	148 (0.7-1.0)
Largest farm (hectares)	100 (500+)	100 (20+)	100 (5.7-11.3)

Notes:

<sup>a</sup>100 = largest farm size compared with second smallest farm size. Second smallest farm size used in calculations to avoid abnormal productivity results often recorded for the smallest plots.

<sup>b</sup>Table 4-1. Northeastern Brazil, 1973; Production per Unit of Available Land Resource, by Farm Size Group, p.46. Index taken using average gross receipts/areas for size group 2 (small) and 6 (large), averaged for all zones excluding zone F, where sugarcane and cocoa plantations skew productivity average for large farms.

<sup>c</sup>Table 4-29. Relative Land Productivity by Farm Size: Agricultural Census and FABS Survey-based Estimates Compared, (1968-9) p. 84. Index taken using value added per cultivated acre for second smallest size group and largest.

<sup>d</sup>Table 4-48. Factor Productivity of Muda River Farms by Size, Double Croppers, 1972-3 p. 117. Index taken from value added in agriculture/relong (0.283 ha = 1 relong).

Source: Berry and Cline (1978)

These studies support the following generalizations:

- The productivity differential favoring small farms over large one increases with the differences in size. That means it is largest where inequalities in land holdings are greatest, in the relatively land-abundant countries of Latin America and Africa, and smallest in land-scarce Asian countries where farm size distributions are less unequal.
- The highest output per unit areas is often achieved not by the smallest subfamily or part-time farmers but by the second-smallest farm size class, which includes the smallest full-time farmers. This suggests that the smallest farms may be the most severely credit constrained.
- Plantation crops as represented by sugarcane production in Brazil, do not exhibit a negative farm size-productivity relationship (Cline 1971; Kutcher and Scandizzo 1981).
- When land is adjusted for differences in quality using land value or exogenous land quality measures, the negative productivity relationship weakens but does not disappear, especially where it is very large.

Figure 3.

## Profit-Wealth Ratios and Weather Variability, by Wealth and Class

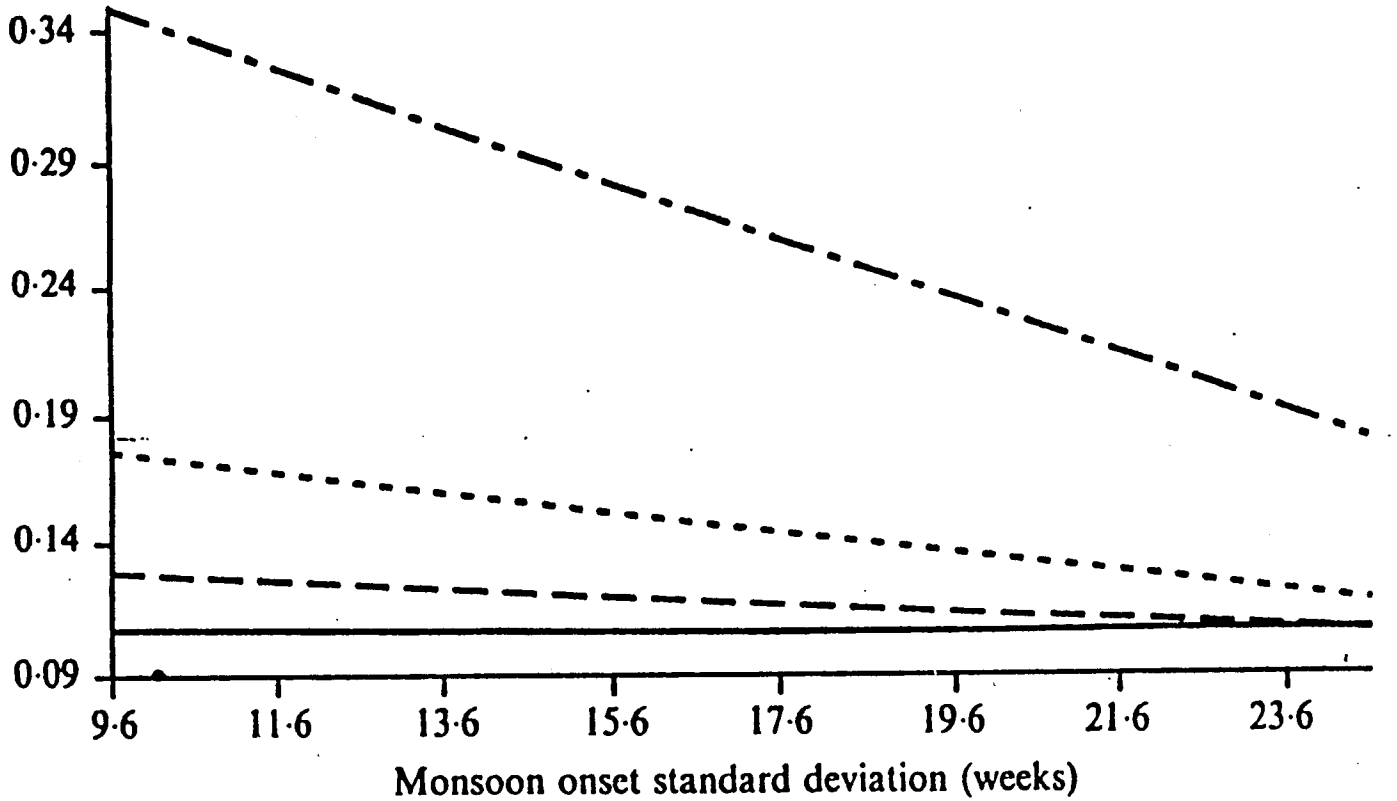


Fig. 3. Profit-wealth ratios and weather variability, by wealth class. Percentiles: —, 20th; ———, 40th; ---, 60th; -·-·-, 80th.

Note: The onset date of the Monsoon was the single most powerful of eight different rainfall characteristics to explain gross value of farm output.

**Table 1: Intervention to Establish and Support Large Farms.**

COUNTRY	LAND MARKET INTERVENTIONS	TAXES AND INTERVENTIONS IN LABOR AND OUTPUT MARKETS
<b>ASIA:</b> India (North)	Land grants from 1st century	Hacienda system; 4th century BC Corvee labor; from 2nd century
China (South)		Limitations on peasant mobility; ca 500 Tax exemption for slaves; ca 500 Gentry exemption from taxes & labor services; ca 1400
Japan	Exclusive land rights to developed wasteland; 723	Tribute exemption for cleared and temple land; 700
Java and Sumatra	Land grants to companies; 1870	Indentured labor; 19th century Cultivation System; 19th century
Philippines	Land grants to monastic orders; 16th century	Encomienda Repartimiento Tax exemption for hacienda workers; 16th century
Sri Lanka	Land appropriation; 1840	Plantations tax exempt; 1818 Indentured labor; 19th century
<b>EUROPE:</b> Prussia	Land grants; from 13th century	Monopolies on milling and alcohol Restrictions on labor mobility; 1530 Land reform legislations; 1750-1850
Russia	Land grants; from 14th century Service tenure; 1565	Restrictions on peasant mobility: - Exit fees; 1400/50 - Forbidden years; 1588 - Enserfment; 1597 - Tradability of serfs; 1661 Home farm exempt from taxation; 1580 Debt peonage; 1597 Monopoly on commerce; until 1830
<b>S. AMERICA:</b> Chile	Land grants ( <i>mercedes de tierra</i> ); 16th century	Encomienda; 16th century Labor services ( <i>mita</i> ); 17th century Import duties on beef; 1890 Subsidies to mechanization; 1950-60
El Salvador	Grants of public land; 1857 Titling of communal land; 1882	Vagrancy laws; 1825 Exemption from public and military services for large landowners and their workers; 1847
Guatemala	Resettlement of Indians; 16th century	Cash tribute; 1540 Manamiento; ca 1600 Debt peonage; 1877
Mexico	Resettlement of Indians; 1540 Expropriation of communal lands; 1850	Encomienda; 1490 Tribute exemption for hacienda workers; 17th c. Debt peonage; 1790 Return of debtors to haciendas; 1843 Vagrancy laws 1877
Viceroyalty of Peru	Land grants; 1540 Resettlement of Indians (congregaciones); 1570 Titling and expropriation of Indian land; 17th century	Encomienda; 1530 Mita: Exemption for hacienda workers; 1550 Slavery of Africans; 1580

<b>AFRICA:</b> Algeria	Titling; ca 1840 Land grants under settlement programs; 1871 'Settlers' law' 1873	Tax exemption for workers on European farms; 1849 Credit provision for European settlers
Angola	Land concessions to Europeans; 1838, 1865	Slavery; until 1880 Vagrancy laws; 1875
Egypt (Ottomans)	Land grants; 1840	Corvee labor; from 16th century Corvee exemption for farm-workers; 1840s Land tax exemption for large landlords; 1856 Credit and marketing subsidies, 1920 and 1930s
Kenya	Land concessions to Europeans; ca 1900 No African land purchases outside reserves; 1926	Hut and poll taxes; from 1905 Labor Passes; 1908 Squatter laws; 1918, 1926 and 1939 Restrictions on Africans' market access; from 1930: - Dual price system for maize - Quarantine and force destocking for livestock - Monopoly marketing associations - Prohibition of African export crop cultivation Subsidies to mechanization; 1940s
Sokotho Caliphate	Land grants to settlers; 1804	Slavery; 19th century
Malawi	Land allotments to Europeans; 1894	Tax reductions for farm-workers; ca 1910
Mozambique	Comprehensive rights to leases under prazo; 19th century	Labor tribute; 1880 Vagrancy law; 1899 Abolition of African trade; 1892 Forced cultivation; 1930
South Africa	Native reserves; 19th century Pseudo-communal tenure in reserves; 1894 Native Lands Act; 1912 - Demarcation of reserves - Elimination of tenancy - Prohibition of African land purchases outside reserves	Slavery and indentured labor; 19th century Restrictions on Africans' mobility; 1911, 1951 Monopoly marketing; from 1930 Prison labor; ca 1950 Direct and indirect subsidies; 20th century
Tanganyika	Land grants to settlers; 1890	Hut tax and corvee requirements; 1896 Compulsory cotton production; 1902 Vagrancy laws (work cards); 20th century Exclusion of Africans from credit; 1931 Marketing coops to depress African prices; 1940
Zimbabwe	Reserves; 1896 and 1931	Poll and hut taxes; 1896 Discrimination against tenancy; 1909 Monopoly marketing boards; from 1924 - Dual price system in maize; - Forced destocking in livestock; 1939

outright until the 1950s. European monopolies on sales of tobacco in Zimbabwe and Malawi were directly transferred to large farms after the countries gained independence.