

SOLUTIONS TO FINAL EXAMINATION 2007

1. ($8 \times 2 = 16$ marks).

(a) *The income per acre on small family farms in many developing countries tends on average to be higher than on larger farms, by approximately 10–50%.*

It is true that the income per acre on small family farms tends to be higher, but by a much larger extent: they are between one and a half times to five times higher than the largest farms in India, Pakistan, Malaysia or Brazil.

(b) *A sharecropping contract is less efficient than a fixed rent contract because it generates weaker incentives for farmers to supply labor effort.*

This is correct if efficiency is defined in terms of labor effort, as the landlord's share operates like a tax on the returns to a tenant's effort. However, sharecropping provides insurance to the tenant against fluctuations in crop yield arising from reasons beyond his control, so if this insurance effect is incorporated also in the notion of efficiency then they need not be less efficient than fixed rent contracts (since the latter offers no insurance at all).

(c) *If the sole purpose of levying taxes and tariffs on industrial products is to raise revenues for the government, then retail sales taxes are superior to import tariffs (that raise the same amount of revenues) from the standpoint of domestic consumers.*

Agree. Retail sales taxes do not discriminate between domestic and foreign suppliers, so that lower cost suppliers manage to outcompete higher cost suppliers, resulting in lower prices paid by customers. Tariffs award an advantage to domestic manufacturers, thus enabling them to displace lower cost imports, resulting in an increase in the market

price. Since the sole purpose of the fiscal measures is to raise revenues rather than promote domestic industry, sales taxes are the preferred instrument.

(d) The principal reason for the spurt in population growth rates in the first stage of demographic transition is an increase in birth rates resulting from an increase in per capita income.

False: it relies instead on a fast drop in the death rates resulting from improvements in agricultural productivity, and from improvements in standards of public health and sanitation.

(e) Crude death rates vary considerably between countries with per capita income ranging between \$250 and \$6,000 per annum.

False: they are about the same (approximately 9-10 deaths per 1000) for all these countries.

(f) Industrial policies based on import substitution generate short-term losses for an economy, that may or may not be justified in the long run.

Agree: import substitution via tariffs or quotas raise the price of imports that decrease consumer surplus more than they increase the profits of domestic producers in the short run. In the presence of learning-by-doing, however, the protection may enable domestic producers to gain market share, lower their costs of production, and later compete effectively against foreign competition.

(g) Since timber is a marketable commodity, problems of deforestation can be overcome by privatizing forests and relying on market incentives.

Disagree. While privatization of forests may help overcome the ‘tragedy of the commons’ resulting from open access to forests, it is unlikely that the problem can be solved entirely in this manner. Deforestation gives rise to adverse effects on soil erosion, water flow and quality, and on climate, which affects the welfare of large numbers of individuals. These environmental effects represent external costs that are not borne by private tree owners;

hence market incentives will lead to excessive rates of deforestation. The large numbers of those affected by the resulting environmental degradation imply that it is unlikely that decentralized bargaining in the Coasian fashion will serve to overcome this problem.

(h) The share of 'dirty goods' in exports of OECD countries decreased substantially between 1960-90, while it increased for non-OECD countries: this provides evidence in favor of the 'pollution haven' hypothesis that trade between North and South worsens the environment.

The fact reported is correct, but it could have resulted from growth (combined with the environmental Kuznets curve whereby OECD and non-OECD countries are on different sides of the threshold per capita income), or stricter environmental controls in the North, rather than freer trade. There is evidence against the pollution haven hypothesis: e.g., the relative price of dirty goods in OECD countries did not increase over this period.

2. (4 + 2 + 6 = 12 marks) *(a) Describe the key assumptions underlying the Malthusian theory of population, and explain the reasoning underlying its prediction that per capita income cannot grow in the long run.*

The two key assumptions are (i) increases in per capita income above the subsistence level causes fertility to rise; and (ii) increases in population cause total GDP to be unchanged, and there is no technical progress or capital accumulation. Then any rise in per capita income above the subsistence level will cause population size to grow, which will depress the per capita income back to the subsistence level.

(b) Explain in what way the Malthusian hypothesis concerning the effect of per capita income on fertility is contradicted by the evidence on demographic transition undergone by different countries since the 19th century.

In the second half of the demographic transition, fertility rates fall while per capita income rises. This contradicts the first Malthusian postulate described above.

(c) Provide as many explanations as you can for the fertility trends observed during the second stage of the demographic transition.

Fertility can drop as per capita income increases because of either of the following reasons: (i) rise in wage rates create a substitution effect with respect to the cost of parents' time, causing them to have fewer children, which overcomes the income effect (which causes them to have more children); (ii) a shift in parental preferences in favor of quality over quantity of children, owing partly to lower costs of schooling and increasing urbanization; (iii) rise in female wages and female labor participation, which reinforces cause (i) above; (iv) improvements in female literacy, which increase their wages and their bargaining power within the household; (v) improvements in child health, which lower infant mortality rates and thus reduce the incentives of parents to 'hoard' children to ensure their children will survive to look after them in their old age; (vi) improved social security, pension systems, and financial markets which allow people to save for their old age rather than rely on children for old age support; (vii) changes in social norms towards fewer children per family; (viii) greater availability of low cost contraceptives; (ix) reduction in extent of child labor.

3. (6+6 = 12 marks) (a) *Explain the argument underlying the Stolper-Samuelson Theorem concerning the effects of trade liberalization on wage inequality in developing countries.*

The logic is the following. LDCs have a comparative advantage in unskilled-labor-intensive goods, while DCs have a comparative advantage in skilled-labor-intensive goods. Trade liberalization expands exports of unskilled-labor-intensive goods and imports of skilled-labor-intensive goods. This raises unskilled wages and reduces skilled wages, thus reducing wage inequality.

(b) *Is the empirical evidence available for Latin American countries over the past two decades consistent with the Stolper-Samuelson Theorem? Explain reasons why you think this is so.*

Most empirical studies in Latin America are not consistent with the Stolper-Samuelson predictions: they show a tendency for gap between skilled and unskilled wages to widen (e.g., studies of Adrian Wood (1997), Robert Feenstra and Gordon Hanson (1995) or Gordon Hanson and Ann Harrison (1999) for Mexico, or other studies for Colombia, Chile or Costa Rica). Possible reasons for this are: (i) the two-factor assumption of the S-S Theorem may not hold (as Feenstra-Hanson argue: the more skilled grades of labor in Mexico are

comparable to less-skilled grades of labor in the US, so wage inequality could grow both in Mexico and US if Mexico tends to export goods produced by relatively skilled workers in Mexico); (ii) the two-country assumption may not hold (so if China is a third country apart from Mexico and US then trade liberalization may cause Mexico to import unskilled-labor-intensive goods from China, which reduces unskilled wages in Mexico).