Professor Robert Staiger Winter 2007/08

Economics 165: Midterm

Please be concise and to the point. Print your name on your exam and turn it in with your blue books. You have 110 minutes. Answer Part I, and 2 questions from Part II. Good luck!

Part I

1. (40 points) In their Case Study "Box" on the transfer problem and the Asian Crisis, Krugman and Obstfeld observe that, despite experiencing a sudden reversal of international capital flows (i.e., a sudden stop of international transfers from the rest of the world) beginning in 1997, the affected Asian countries did not suffer a significant terms-of-trade deterioration after 1997 as Keynes would have argued, although their rates of growth did slow dramatically after 1997. At the same time, as we discussed in class, Acemoglu and Ventura suggest that countries experiencing an export-biased growth spurt relative to the world will suffer a terms-of-trade decline and, as a result, subsequently experience slower-than-world-average growth. As we observed in class, a number of countries that were at the center of the Asian Crisis seemed to provide exceptions to the Acemoglu-Ventura story up through 1997, but probably not thereafter. With this background, use the 2-Country Basic Trade Model to:

(a) perform an analysis of the Keynes case for the terms-of-trade effects of an international transfer;

(b) perform an analysis of the terms-of-trade effects of export-biased growth; and

(c) use your analysis from parts (a) and (b) above to construct a possible explanation for the following three "facts": (i) the Asian countries did not conform to Keynes's expectation that their terms-of-trade should have worsened when they stopped receiving large transfers from the rest-of-world after 1997; (ii) for a period leading up to the 1997 Asian Crisis, the Asian countries did not conform to the Acemoglu-Ventura story that they should not have been able to sustain rapid rates of export-biased growth relative to world growth rates; and (iii) after the 1997 Asian Crisis and with the end of transfers from the rest of the world, the affected Asian countries did conform to the Acemoglu-Ventura story that they could not sustain rapid rates of export-biased growth relative to world growth rates. (Note: you can take as given the link from a worsening terms-of-trade to a slowing growth rate that Acemoglu and Ventura derive).

Part II (Choose 2 of the following 3 problems).

2. (30 points) Suppose that a country is endowed with 10 units of capital and 10 units of labor, and that it can produce 2 goods, x and y. Good x can be produced with inputs of capital and labor according to a constant-returns-to-scale technology that exhibits typical "smoothly substitutable" isoquants. Good y can also be produced with inputs of capital and labor according to a constant-returns-to-scale technology, but the isoquants for good y are "right angles" (Leontief isoquants) and employ capital and labor in fixed and equal proportions. Using the properties of constant-returns-to-scale technologies derived in class (i.e., you do not need to re-derive these properties here),

(a) demonstrate what the country's Production Possibilities Frontier must look like;

(b) depict the country's autarky prices assuming that the country's preferences are such that it consumes positive amounts of both goods x and y in autarky; and

(c) depict the country's production, consumption and trade if it trades freely with a "large" rest-of-world whose price of x relative to y is lower than this country's autarky price of x relative to y.

3. (30 points) Consider two large countries, A and B. A imports good *x* and exports good *y*, while B imports good *y* and exports good *x*.

(a) Show that a *reciprocity rule* implies a fixed terms of trade if the rule requires that negotiated tariff changes must induce changes in a country's import volume that are equal to the changes in its export volume, in the particular sense that

$$p^{w0}[M_x^{A1} - M_x^{A0}] = E_y^{A1} - E_y^{A0},$$

where p^w is the relative price of *x* to *y* on world markets, and where "0"- and "1"- superscripts denote "pre-negotiation" and "post-negotiation" magnitudes, respectively (and where $M_x^{A1} > 0$ by assumption).

(b) Next show (with math or graphs) that, starting from the tariff choice that A would make unilaterally (i.e., absent negotiations with B), A would desire to lower its tariff in a negotiation with B if the negotiation satisfied the reciprocity rule described in part (a) above.

4. (30 points) Consider a small country that imports good *x* and exports good *y* and is initially trading freely with a "large" rest-of-world, and whose citizens are all the same and have homothetic preferences. The government of this country is concerned about the health of its (representative) citizen: in particular, according to a new health study, the citizens of this country are consuming good *x* and *y* in a relative proportion that constitutes a perfectly well-balanced diet, but they are eating too much.

(a) Using the Basic Trade Model, and assuming that the government cannot force its citizens to violate their budget constraints (so that balanced trade must be maintained throughout), provide a ranking, from best instrument to worst instrument, over an import tariff, a production subsidy, and a consumption tax, for achieving a health improvement for the representative citizen of this country.

(b) Offer an interpretation of the ranking you provide in part (a) above according to the logic of the "targeting principle" discussed in class.