■ **Standard analysis of preferential trade areas (PTAs) due to Viner (1953), and Meade (1955)**

■ **In Figure 1, assume demand in country A for a good is vertical line D_AD_A, firms in countries A, B and C supplying at constant prices $P_A > P_B > P_C$, which under competition are their constant average and marginal costs**

■ **B and C do not trade with each other, and initially A imposes a non-discriminatory per unit tariff t, such that $P_A > P_C+t > P_B$, such that quantity demanded $0Q_0$ is entirely sourced from C at a price P_C+t, (e+f) being the tariff revenue collected by country A**

■ **Suppose A eliminates tariff on B, but retains it on C, so that it imports from B rather than C at price P_B. As no new trade is created, trade agreement is *trade-diverting* as A substitutes less efficient imports from B for imports from C**

Country A loses tariff revenue (e+f), e being the loss due to higher production costs in B, while f is a gain in consumer surplus in A, global net loss being e

■ **Now suppose non-discriminatory tariff in A is t', such that $P_A < P_C+t' < P_B+t'$, entire demand $0Q_0$ satisfied internally**

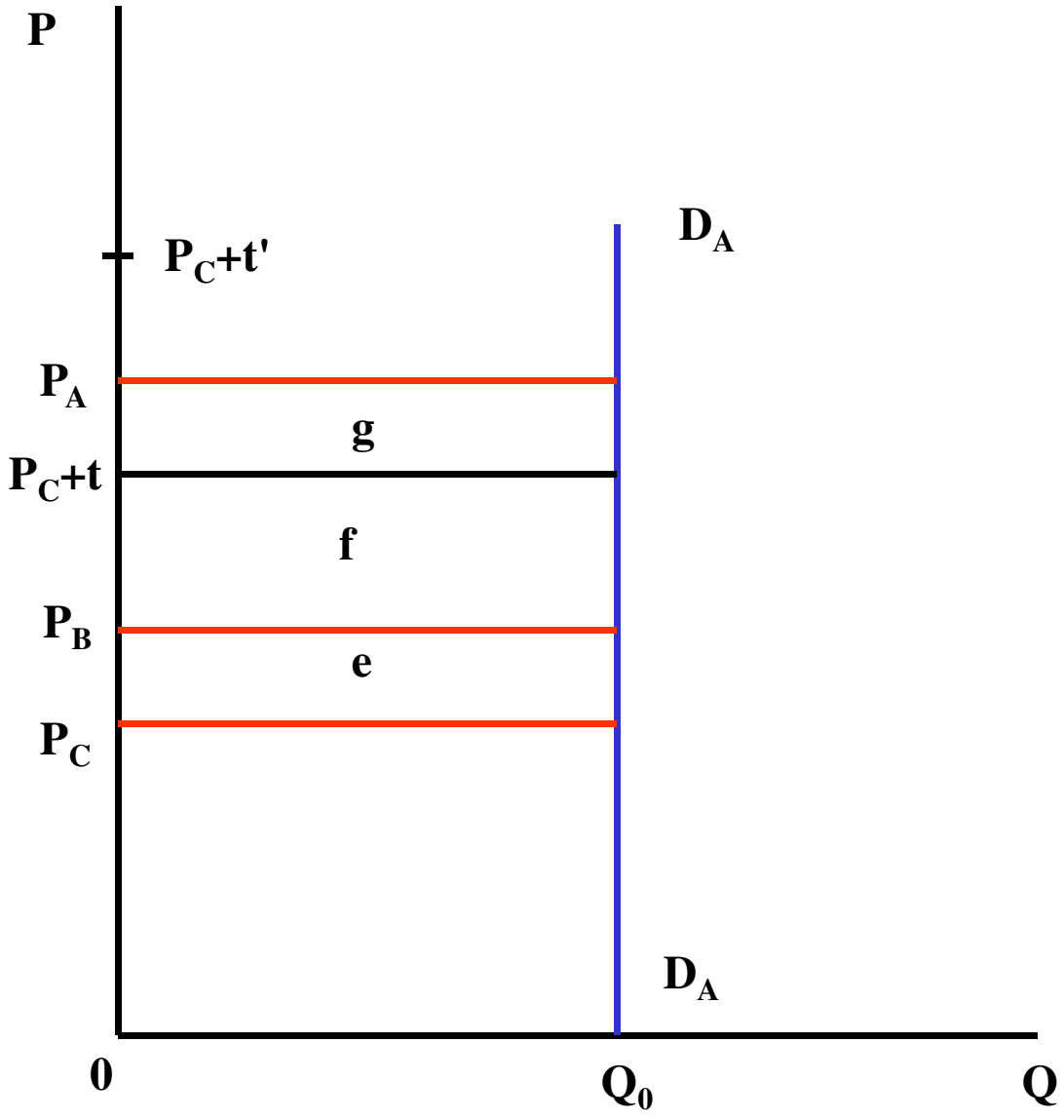

Figure 1: Trade Creation and Trade Diversion

■ **Suppose A removes tariff on B, but not C, supply now coming from B not A. Price in A drops from P_A to P_B, yielding a gain in consumer surplus of (f+g)**

■ **As PTA creates new trade between A and B, and is associated with a switch from high-cost suppliers in A to lower cost in B, it is *trade creating*, welfare of A and the world rising by (f+g), while that of B and C is unchanged**

■ **As PTA is trade creating in some goods, and trade diverting in others, in general cannot unambiguously predict welfare effects – answer depends on relative magnitudes of trade creation and diversion (Viner)**

■ **Lipsey (1957) has shown though that a wholly trade-diverting PTA might still result in a net increase in welfare. In Figure 2, let demand curve be D_AD_A, the initial non-discriminatory tariff being t, with A importing $0Q_0$ from C**

■ **Removal of tariff on B but not C, prices out the least-cost producer C, but allows an expansion of imports by A to $0Q_1$**

■ **(e+f) is lost tariff revenue, f being redistributed to consumers in A, while h is the gain on new imports. In principle, h could exceed e**

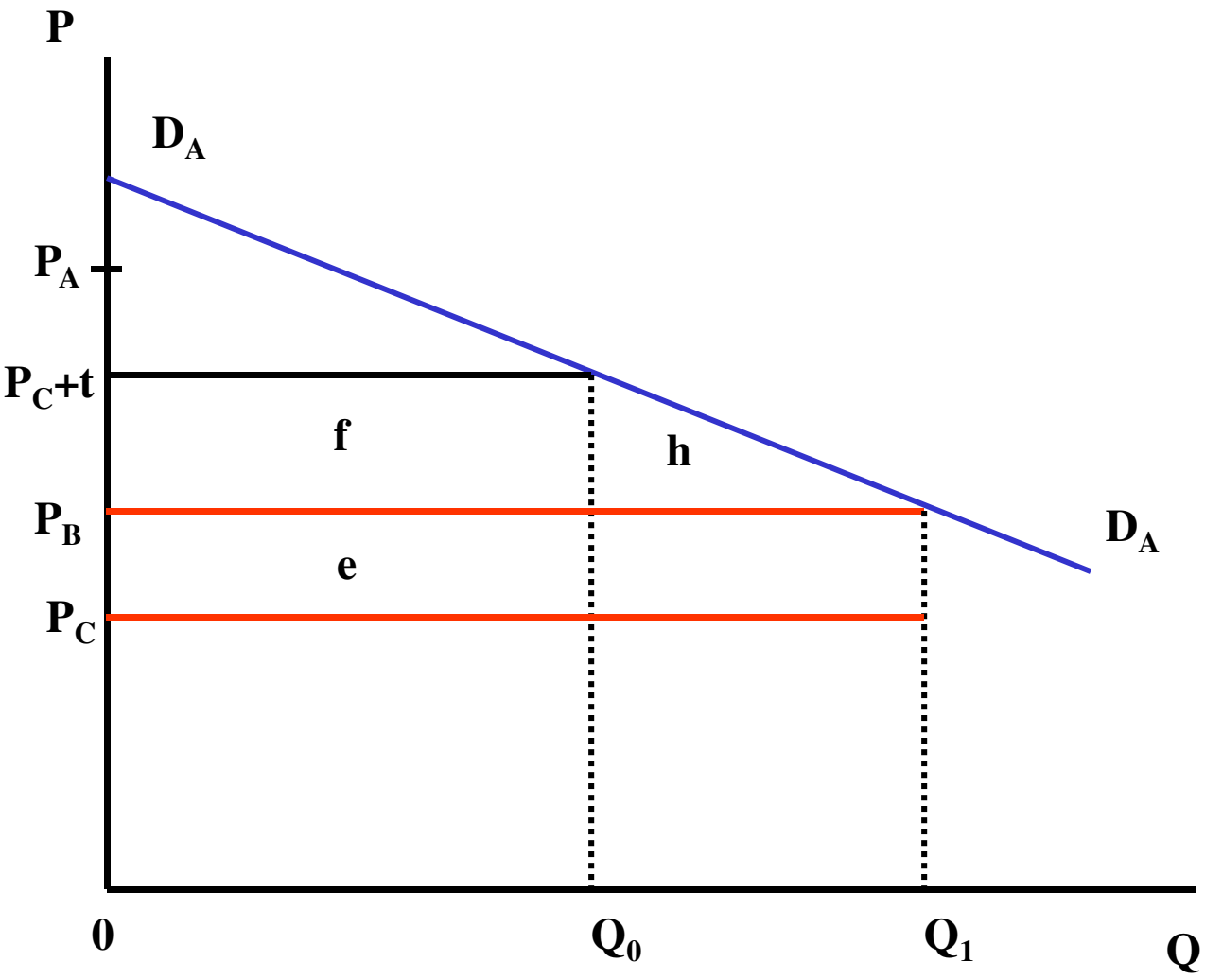

Figure 2: Welfare Gain under Trade Diversion

■ **Previous model still unrealistic as it implies all of A's imports come from either B or C, but not both. In Figure 3, suppose A is still an importer of good, with import demand of M_AM_A, while B is an exporter of steel with export supply of E_BE_B, and C's infinitely elastic supply is P_CP_C**

■ **Initially, A imposes a tariff of t on both B and C, shifting their export supply curves to $E^t_BE^t_B$ and $P^t_CP^t_C$. Internal price in A is P^t_C, with imports from B of $0M_1$, and imports from C of M_1M_3. A's gains from trade relative to autarky are KGS (net surplus) and GSNH (tariff revenue)**

■ **How a PTA between A and B affects equilibrium depends on level of external tariff in B on imports in the post-PTA equilibrium**

■ **Suppose B's external tariff on the good coincides with A's, i.e., a common external tariff. Results in a common internal price of $P^t_C = P_C+t$, B's supply curve now being E_BE_B, with some imports, M_2M_3, continuing to come from C at price P^t_C, the internal price**

■ **There is pure trade diversion from C to B of M_1M_2, and no new trade is created**

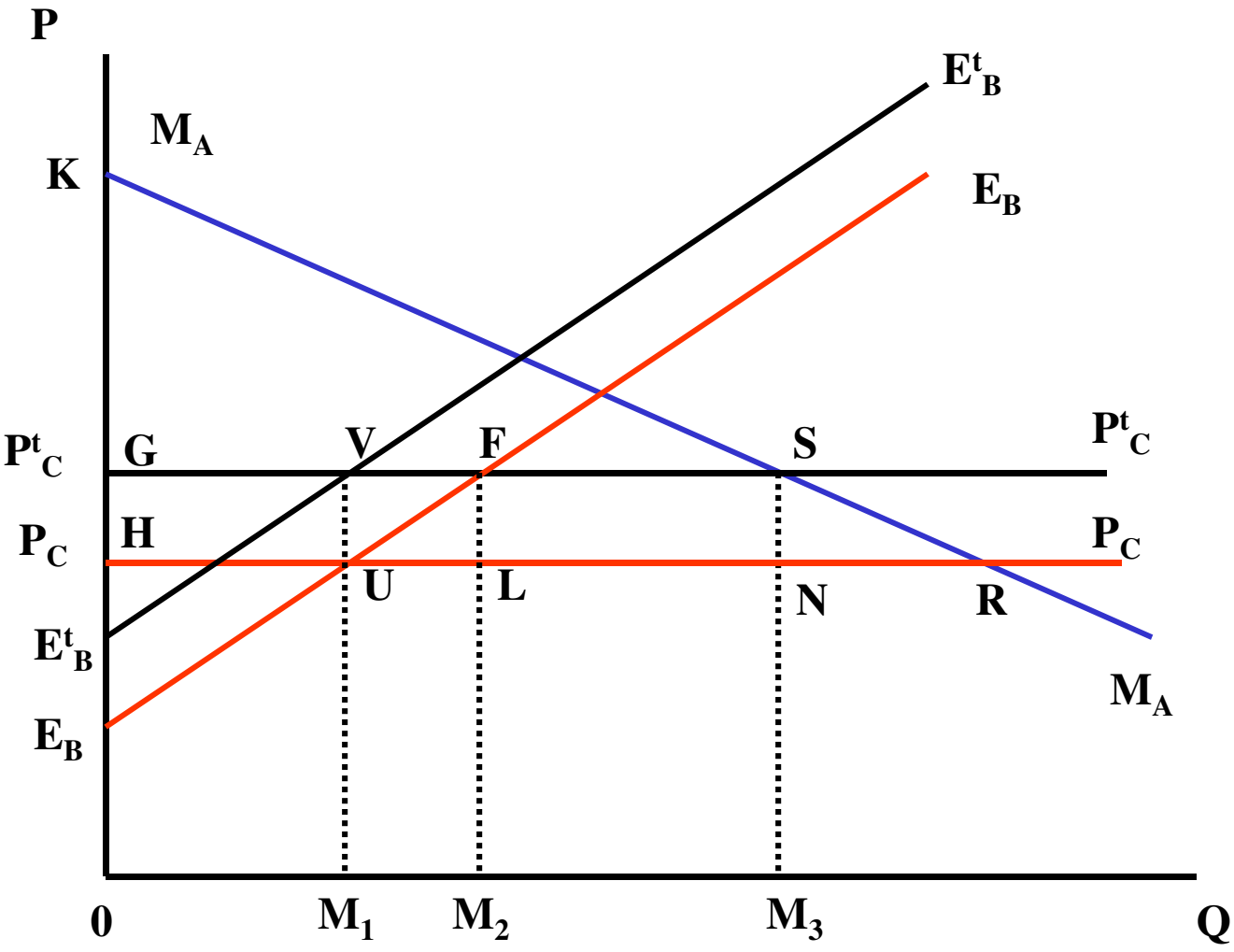

Figure 3: Preferential Removal of Tariff

■ **Intra-PTA terms of trade shift in favor of B, tariff revenue of GFLH being given up by A, GFUH being the gain by B, and FLU is the deadweight loss of the imports M_1M_2 from B replacing those previously from C**

■ **Analysis can be extended to case where A and B have different tariffs against imports from C, i.e., a free trade agreement (FTA) – overall, analysis suggests that if one is seeking unambiguous gains from a customs union or FTA, must look for sectors where partner country B is sole supplier even at initial equilibrium – i.e., no trade to be diverted**

■ **Assume scale economies are external to firms producing a homogeneous good, industry-wide average cost curve is AA' in Figure 4, and this technology is identical in countries A and B**

■ **DD' is demand in each country, UU' the horizontal sum being demand in PTA. Prior to PTA, each country imposes a non-discriminatory tariff at the same rate**

■ **Suppose C's tariff-inclusive price is P^t_C, and lies between E and F – initially, both countries import from C, where (a+c) is tariff revenue and b is consumer surplus in A and B**

■ **Formation of a PTA allows one country to produce by exploiting larger market, so gains from scale cause internal price to fall, although trade is diverted from C**

■ **Each country loses c due to trade diversion, while gaining area d – again net effect of PTA is ambiguous**

■ **If P^t_C lies above E initially, both countries produce and consume their own steel. With a PTA, keeping external tariff at initial level, one of the two countries ceases to produce, and PTA-wide price falls to P_U, each country gaining, i.e., no trade diversion**

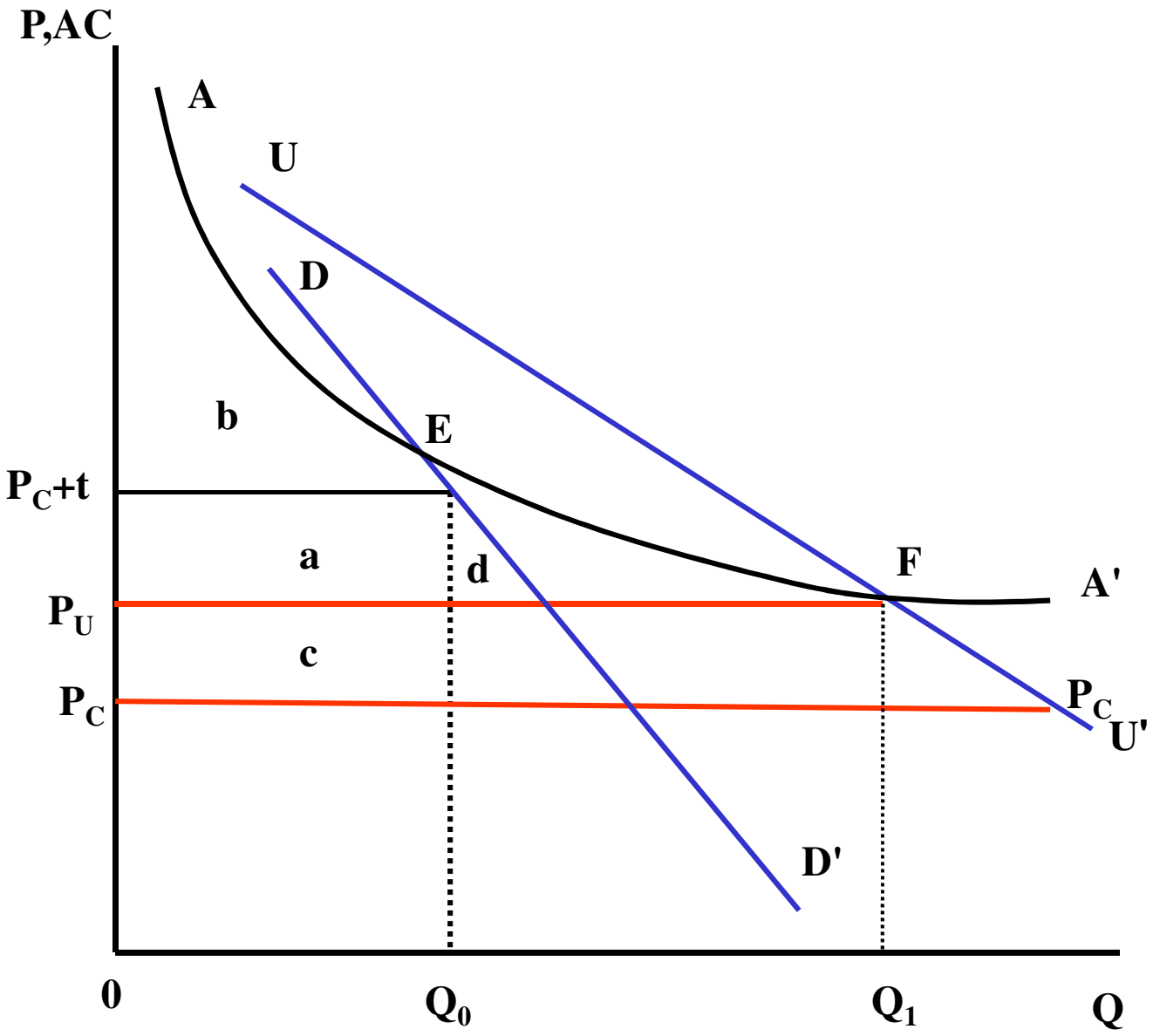

Figure 4: Economies of Scale and PTAs