What was the Marshallian dilemma regarding increasing returns to scale? How did Marshall resolve this dilemma? How did later economists resolve the dilemma? Critically evaluate each of these resolutions of the dilemma. (4/5/12)

A. The Marshallian dilemma and his resolution

The dilemma is articulated in Marshall [1890] Chapter XII on equilibrium and increasing returns to scale (IRS). Marshall calls the relationship between equilibrium and IRS "complex" because in the long-period the elasticity of supply could be potentially infinite.

Marshall's long-period (when all factors of production are mobile) partial equilibrium rests upon "quasi-rents" (short-period firm-level natural advantages) being competed away. This equilibrium implies DRS (or CRS with perhaps government regulation to ensure competition). On the one hand Marshall wrote that DRS could be expected only if land was the primary factor input. On the other hand however, Marshall wrote that this was not the general case. It was expected that capital and labor would be the predominant inputs and that when combined would offer conditions of IRS in both external economies (economic activity external to both firm and industry, and, which offers scale economies to both firm and industry) and internal economies (within firms). Increasing returns to scale in the long-period would mean logically that there would be only one or two firms in an industry and thus "quasi-rents" would not be competed away. Only in perfect competition is satisfaction maximized, and, with the "dilemma" perfect competition is not the general case.

Hunt 2002 writes that Marshall could have dealt with this in one of three ways. The first was to deny the "invisible hand" competitive ideology and argue for a new ideology around the social advantages of large oligopolistic firms. The second would be to call for government regulation of industries with IRS to ensure competition. The third would be to adopt Marx's view that capitalism does not lead to optimal social outcomes and therefore a new form of societal organization is necessary.

Marshall [1890] addresses the dilemma by stating "economic problems are imperfectly presented" when treated as static equilibrium and then uses metaphors of organic growth to describe the economy. The economy is like a forest and "nature contains no leaps". Some industries are trees undergoing IRS and are in equilibrium with individual firms being the leaves which turn-over annually.

Other industries are fighting for their place in the sun. Firms and industries cannot last forever as there is organic decay. "Luck and industry" can explain the rise of new firms and quasi-rents but luck and industry do not last forever. In fact Marshall [1890] in Chapter XV writes that industries with IRS should be subsidized as allows more decreasing cost goods to be available, while those industries with DRS should be taxed.

B. Later economists on economies of scale [critiques in brackets]

In 1922 Clapham criticizes Marshall's categories of IRS, DRS and CRS stating that no actually-existing industry could be placed inside any of these "empty economic boxes". The classification of industries is by necessity arbitrary. Clapham uses the hat industry as an example (thus the metaphor of hat boxes). Examining the inputs to hat-making he finds that the industries used as inputs into hat-making, for example coal, experience differing returns to scale depending on the state of economic development at a given time and place for the sourcing of coal. In general Clapham finds that manufacturing of final goods may experience IRS, whereas inputs to production may experience DRS. It is not possible to classify industries as homogenous and thus with definitive scale returns. [With this I agree and have no criticism].

It might be fair to say that Sraffa 1926 is a general critique on Marshallian partial-equilibrium theory. Sraffa states that external economies are always present and therefore all markets are interrelated. Sraffa then focuses on the real time element in economic development. There are historical reasons to deny that consumers are indifferent between goods of like-types (that goods are perfect substitutes for each other as is assumed under Marshallian perfect competition). When a producer creates a new product for a new market the producer, to use modern language, has a first-mover advantage and builds brand loyalty. Sraffa states that the price-elasticity of demand for this product grows with time and therefore this then logically implies that "monopoly profits" are not competed-away. Additionally, credit and cost barriers-to-entry prevent perfect competition from competing away the monopoly profits.

[The assumption here is that products aren't substitutable, this is an unresolved debate; one of consumer-sovereignty and concomitant above-normal profits to some firms versus one of regulation needed to curb above average profits. This debate is perhaps unresolvable with analytical tools and is more basically confined to pre-analytical vision. A possible critique of the non-substitutability assumption is that international competition might prevent domestic monopolies for certain goods].

Additionally Sraffa 1926 states that in order to accept Marshall's system and perfect competition we would have to analytically, 1) make unrealistic assumptions. We would have to assume that an industry is the sole user of a scarce resource in order to have DRS, and, for IRS we would need to assume that a scarce resource is external to the firm yet internal to the industry, or 2) we would need to assume CRS for all industries. We would have to accept either 1) or 2) or abandon perfect competition and equilibrium. [I have no criticism of this perfect logical argument.]

Chamberlin [1933] wanted to re-orient value (price) theory to account for the fact that both competitive and monopolistic factors determine prices in the real world. Chamberlin believed that his theory of Monopolist Competition was more "illuminating" than the study of the price system as one of perfect competition supplemented by a theory of monopoly. Chamberlin takes pains to separate his ideas from those of Robinson's (1933) Imperfect Competition (who wanted to resolve limitations of Marshall's theory of the firm). Both Chamberlin and Robinson take as given Viner's (1931) doctrine of capital being fixed in the short-term and this results in "U-shaped" cost curves, against which Robinson applies her Marginal Revenue curves. However these curves are only applicable at the firm level and necessarily Robinson's industries are comprised of homogenous products. For Chamberlin IC can explain output levels but not prices. For Chamberlin, following Sraffa, products are not homogenous and are in fact differentiated. Therefore, it is not barriers-to-entry and "excessive profits" which define monopolies, but other means of market-power such as price setting and discriminatory practices. [I believe that the same critique as above applies to Chamberlin's results. The level of social control necessary to ensure non-"excessive" profits is a matter of the political process and perhaps beyond the scope of economic analysis.]

MC implies that industries are oligopolistic with feedback between the firms unlike the assumptions under the mainstream model where firms are price-takers in perfect competition. However, Chamberlin did not introduce a systematic definition of oligopoly so there was no "classical moment" around the theory of monopolistic competition.

With the rise of mathematical formalization positivists (i.e., Friedman 1953) resorted back to the mainstream theories of pure competition and monopoly. The positivists acknowledged that monopolistic competition is more representative of reality, yet knowing that firms do not behave like the Marshallian models the positivists agreed to model the economy "as if" they did. As long as the positivist models had underlying predictive powers, then a more accurate model of reality was unimportant. [A critique of positivist economics is that this method of economics assumes the *homo economicus* ideal-type and *ceteris paribus* condition, neither of which may hold true in reality, especially given as we have seen from Sraffa 1926 defining industries is necessarily specious. Additionally, as we have seen from Viner, the "U-shaped" firm cost is necessarily short-term. Positivist economics does not help explain transformational growth nor decline].