**Kaldor on the equilibrium of the firm: 1934-1938**

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I  Introduction

Nicholas Kaldor (1908–1986) is now known as one of the most renowned critics of equilibrium economics. His emphatic study of increasing returns and cumulative causation has encouraged the growth of heterodox directions in the economics, such as that of post-Keynesians, Regulationists, as well as evolutionary economists. However, in the 1930s, Kaldor was a member of the ‘Robbins Circle’ at the London School of Economics and Political Science (LSE). Recent researchers of Kaldor generally regard the early Kaldor in this period as a supporter of equilibrium economics such as Austrian economics and Lausanne economics (Targetti 1992; Thirlwall 1987; Nei 1989, 1991). Indeed, Kaldor recollects that period as follows:

‘Robbins’ economics (much influenced by his contacts with Viennese economists, mainly von Mises) was the general equilibrium theory of Walras and the method of presentation of Wicksell and of Knight, Risk, Uncertainty and Profit. Robbins as a young economist absorbed this theory—the keystone of which is the marginal productivity theory of distribution in its generalized form, as expounded by Wicksell and Wicksteed—with the fervour of a convert and propounded it with the zeal of a missionary. It was thanks to him that I acquired a thorough grasp of that theory without being hampered by doubts and hesitations—which in other circumstances might have inhibited me from mounting the intellectual effort required to master its content’ (Kaldor 1986, pp.14–15).

This recollection reveals Kaldor’s developmental indebtedness to Robbins. However, it is not sufficient evidence to allow one to conclude that all of Kaldor’s early works in the 1930s are confined to equilibrium economics. In ‘The Equilibrium of the Firm’ (Kaldor 1934a), he specifically addressed the indeterminateness that is significant of the entrepreneur’s role in the ‘coordination’ of the firm. Later, in a review of J. Robinson’s

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Kaldor proposed an ‘imagined demand curve’ that is perceived by dynamic anticipation of entrepreneurs. These are realistic factors that are not dependent on an equilibrium concept. Furthermore, in ‘Market Imperfection and Excess Capacity’ (Kaldor 1935), Kaldor referred to market imperfection. In his later recollection, Kaldor remembers it as proceeding parallel with the Keynesian revolution:

“The discovery that competition in a capitalist economy does not conform to the assumption of pure or perfect competition was, just as Keynes’s *General Theory*, the product of the intellectual ferment of the 1930s’ (Kaldor 1986, p.53).

Our view is that Kaldor had from the beginning maintained a critical attitude toward equilibrium economics. We are left with the impression that Kaldor’s early contributions to equilibrium economics have not been studied seriously. In this paper, we reveal Kaldor’s critical stance on issues of equilibrium economics by examining his presentation of the theory of the firm during this period.

Kaldor’s theory of the firm contained a theoretical key to the cost controversy of the 1920s and 1930s. Kaldor is not generally considered as a participant in the cost controversy. However, if we regard the theory of imperfect or monopolistic competition of J. Robinson and Chamberlin as the solution of the cost controversy, we can extend the framework of the cost controversy so as to cover Kaldor’s reflection on J. Robinson’s *The Economics of Imperfect Competition* and his arguments against Chamberlin. (Chamberlin 1937, 1938, 1962: Kaldor 1935, 1938). By inquiring into this relationship, we will elucidate Kaldor’s position in the cost controversy and clarify his critical contribution to equilibrium economics.

Although numerous studies have been made on Kaldor as Post-Keynesian (Targetti 1992; Thirlwall 1992; Toner 1999; Inoue 1999; Nei 1989, 1991), few attempts have been made to explore the early writings of Kaldor (Targetti 1992; Thirlwall 1989; Nei 1989, 1991). Targetti (1992) and Thirlwall (1989) pointed out that Kaldor’s “A Classificatory Note on the Determinateness of Static Equilibrium” (Kaldor 1934a) was a great exposition of the existence, uniqueness and stability of equilibrium. Therefore, it is generally grasped that early Kaldor supported general equilibrium. In addition, Nei (1989, 1991) showed that Kaldor was an early convert from marginal economics to Post-Keynesian’s economics. These studies have characterized the thought of early Kaldor in contrast to that of later Kaldor as a Post-Keynesian. Explorations of arguments in evolutionary economics (Toner 1999; Inoue 1999) emphasize Kaldor’s later contributions.
II The Cost Controversy and the Long-Term Supply Curve

Kaldor discussed the cost controversy in ‘The Equilibrium of the Firm’ (Kaldor 1934b). First, we begin with a brief description of the cost controversy. Marshall proposed the concept of the representative firm, in which external and internal economies are normally in a stationary state, and provided an accurate explanation of an industry’s equilibrium and an individual firm’s disequilibrium (Marshall 1920). However, Clapham and Pigou first discussed the ‘empty box’ of the firm in 1922 (Clapham 1922; Pigou 1922). Subsequently, Robertson pointed out the tendency of increasing returns and the internal economy in 1924 (Robertson 1924). Finally, Sraffa keenly criticized Marshall’s partial equilibrium theory in 1926 (Sraffa 1926). Stimulated by Sraffa’s criticism, J. Robinson constructed the theory of imperfect competition in 1933 (J. Robinson 1933). On the other hand, A. Young and L. Robbins at LSE considered the theory of the firm from a different vantage than that used for discussion at Cambridge. Young recognized Marshall’s external economies as the basic accompanying fact of increasing returns and suggested the path of a dynamic increasing return, whereas Robbins harshly criticized Marshall’s concept of a representative firm from the recognition of the different capacities of individual firms in an industry.

How then was Kaldor involved with this controversy? First, Kaldor stated that the concept of the supply curve under the partial equilibrium theory developed by Marshall only shows ‘the postulation of a definite functional relationship between price and rate of supply in various industries’ (Kaldor 1934, p.34), and it is ‘by no means such a straightforward self-evident concept as its counterpart, the demand curve’ (Ibid., p.34). This is because ‘perfect competition’ and ‘the existence of a definite cost function for each firm’ are assumed. We can therefore understand the supply curve as follows: ‘In order to arrive at the supply curve for an industry, therefore, it must be shown that corresponding to each price there will be a definite number of firms in the industry and a definite amount produced by each when all firms are in equilibrium’ (Ibid., p.35).

Marshall explained the disequilibrium of individual firms and the equilibrium of an industry using the representative firm concept. However, Kaldor agreed with Robertson’s argument (Robertson 1930) and recognized Marshall’s device as ‘anything other than a small-scale replica of the supply curve of the industry as a whole’ (Ibid., p.36). Furthermore, he thought that Marshall’s argument focused on the equilibrium of an industry rather than the equilibrium of an individual firm: ‘Instead of analyzing at first the conditions of equilibrium for individual firms and then deriving from them, as far as possible, the conditions of equilibrium for an industry, Marshall first postulated the latter and then created a Hilfskonstruktion which answered its requirements’ (Ibid., p.36). In addition, Kaldor examined Robbins’s criticism of the representative firm and insisted that Robbins criticized only a particular solution of Marshall. In Kaldor’s view, a wider perspective was needed in the discussion on the theory of the firm. Therefore,
Kaldor’s criticism on Marshall pertained not to the equilibrium of an industry but to the equilibrium of an individual firm.

Kaldor examined the problem of whether perfect competition is consistent with a definite cost function for each firm from both short-run and the long-run viewpoints. According to Kaldor, in the short run, the supply of some factors is assumed to be fixed. Then, because the prices of the other factors are given, the cost per unit must necessarily rise after a certain point. Therefore, whether a cost curve turns upward under perfect competition in the short-run consideration presents no difficulties (*Ibid.*, pp.38–39). However, considering a long-run supply curve, Kaldor suggested that these two presumptions are incompatible with regard to the following three points.

(i) Indivisibility and increasing returns

We know that the cost per unit of product must necessarily fall if the assumption of complete divisibility of all factors is omitted. This is true because of the fact that with increasing output, more and more indivisibilities (actual and potential) are overcome. As far as this fact is concerned, even if costs rise to a certain range beyond the point of the output where costs of production reach a minimum, they must fall again until they reach the same level. Therefore, in the long run, the size limitation of the firm cannot be explained (*Ibid.*, pp.39-40): ‘The idea of a determinate equilibrium corresponding to each given constellation of tastes and obstacles becomes questionable in a world where the existence of indivisibilities offers advantages for co-operative production’ (*Ibid.*, p.47).

(ii) Diseconomies

It cannot be explained why the output of an individual firm remains small (the number of firms in the industry being large) if external economies affect all firms equally by definition. The theory of external economies only provides a reason for the increasing costs of the industry: it provides no explanation regarding why the costs of the individual firm rise in relation to the costs of the industry. Therefore, the diseconomies must be ‘internal’ in order for them to account for the limitation upon the size of the firm (*Ibid.*, p.40).

(iii) Fixed factor

The technically optimum size of a productive combination cannot be determined merely by the prices of the factors and the production function of the commodity. This is true because we cannot assume a decreasing return to all factors simultaneously. Therefore, to determine the optimum size of their combination, it is necessary to assume that the supply of at least one of the factors included in the production function should be fixed. This fixed cost is the ‘entrepreneurship function’ (*Ibid.*, p.42). The entrepreneurship function consists of ‘risk’ and ‘management’, and the latter consists of ‘supervision’ and ‘coordination’. Risk is defined as the bearing of uncertainty and
supervision is an indivisible factor: therefore, they are not fixed costs. However, the coordination factor is the essential part of the function of management and it must pass through a single brain that is responsible to a whole board of directors. Therefore, a firm’s long-run cost curve is determined by the fixed supply of the coordinating ability. However, Kaldor suggested that coordination is not a fixed factor because it is an ‘essentially dynamic function’ and ‘it is essentially a feature, not of equilibrium but of disequilibrium’. In other words, ‘in a full long-period equilibrium (in Marshall’s stationary state), the task of management is reduced to pure supervision, co-ordination capability becomes a free good and the technically optimum size of the individual firm becomes infinite (or indeterminate)’ (Ibid., p.45).

Based on the above, Kaldor asserted the dynamic character of a firm: ‘Under static assumptions there will be a continuous tendency for the size of the firm to grow and therefore long-period static equilibrium and perfect competition are incompatible assumptions’ (Ibid., p.46), and ‘the existing organization of the economic system, the division of the productive organization into a numerous independent units under a single control, is essentially one adapted to the existence of dynamic change and imperfect foresight’ (Ibid., p.46).

Kaldor referred to J. Robinson and Chamberlin’s argument: ‘There appears a line of escape for those who believe that the position of equilibrium under imperfect competition is otherwise determinate’ (Ibid., p.48). With regard to this argument, Kaldor insisted that the argument that the average cost curve is tangential to the demand curve in the long run is not always valid: ‘This is true, not only the equilibrium amount produced by a given firm will be indeterminate, but also the number of firms in the industry, given the conditions of the demand for goods and the supply of factors’ (Ibid., 49). Kaldor’s argument here is unquestionably a critique composed at that point in time when ‘The Equilibrium of the Firm’ was written. Further, his genial critique features in three essays: ‘Mrs. Robinson’s Economics of Imperfect Competition’ (Kaldor 1934c), ‘Market Imperfection and Excess Capacity’ (Kaldor 1935) and ‘Professor Chamberlin on Monopolistic and Imperfect Competition’ (Kaldor 1938). This issue is discussed in the next chapter.

Kaldor pointed out the inconsistency between the long run supply curve and perfect competition with regard to (i) the problem of indivisibility and increasing returns, (ii) external economies and (iii) the problem of fixed factors. Kaldor further insisted that Marshall’s stationary state does not always settle down. Kaldor’s three critiques of equilibrium economics described above are explained next. First, in (i), the point that Kaldor considered the theoretical significance of indivisibility and increasing returns implies that he was influenced by Young’s lecture. Although he does not mention this explicitly, Kaldor had attended Young’s lecture (Kaldor 1990). Furthermore, Kaldor criticized J. Robinson and Chamberlin from the viewpoint of the indivisibility and
increasing returns. Kaldor’s argument was not the first mention of this point, but we confirm that Kaldor had a critical attitude to the perfect competition of divisibility. Second, in (ii), the point on external economies suggests that Kaldor was influenced by Young and Robbins. Young recognized external economies as the basis of increasing returns, and Robbins attached considerable importance to the different capacities of individual firms in an industry. This point is not original either. Finally, Kaldor’s argument regarding fixed costs in (iii) is original. In Marshall’s stationary state, the average cost curve must be ‘U’ shaped. Austin Robinson explained this shape of the curve on the basis of a firm’s coordination ability (A. Robinson 1958). In brief, the average cost curve is ‘U’ shaped because of the coordination ability that a firm has, and the firm’s scale is determined by this shape. However, Kaldor argued that since a firm’s coordination is, in the long run, dependent on dynamic characteristics, its scale is indeterminate. If we consider Austin Robinson’s argument in the determination of a firm’s scale, Kaldor’s viewpoint was a fresh one at that time. After all, Kaldor’s assertion that the firm does not have the optimum size necessarily in the long run means that Marshall’s stationary state does not exist. In this context, Kaldor always bore in mind a dynamic firm that is in a disequilibrium condition. This conceptualization is related to the imagined demand curves discussed in Part III.

Thus, the early Kaldor demolished the assumption of perfect competition in the cost controversy and later adopted a critical attitude toward equilibrium economics.

### III Market Imperfection and Excess Capacity

#### III-1 Kaldor on J. Robinson’s *Economics of Imperfection Competition*

Joan Robinson’s *Economics of Imperfect Competition* (J. Robinson 1933) was published as a solution to the cost controversy. She elucidated in it the puzzles of perfect competition in the case of increasing returns, excess capacity, differentiation and the representative firm. Her theory of imperfect competition focused on the downward sloping demand curve for individual producers. An individual producer that maximizes profit must fulfill the double condition of the equality of marginal revenue and marginal cost as well as the equality of average revenue and average cost. The equilibrium point is shown by a point of tangency between the individual producer’s demand curve and the downward-sloping average cost curve. The producer’s output is smaller than the optimal scale (the output at the minimum average cost). Robinson referred to it as an ‘excess

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3 Austin Robinson strongly criticized Kaldor’s argument: ‘In Mr. Kaldor’s long period we shall be not only dead but in Nirvana. And the economics of Nirvana, the study of the principles on which decisions should be made in a decision less world, is surely the most fruitless of sciences’ (A. Robinson 1934, p.250). Coase insisted that the size of the firm is determinate (Coase 1937).
capacity'. Moreover, producers in the same industry have an identical cost curve and face an identical demand curve. Therefore, the industry is in equilibrium. This situation corresponds to Marshall's stationary state.

Kaldor agreed with J. Robinson in respect to ‘price differentiation’ and ‘mathematical and geometrical’ arguments. He criticized i) the inconsistency between the title and the contents (Kaldor 1934c, pp.53–54), ii) the marketing cost (Ibid., pp.53–54), iii) the application of marginal theory to imperfect competition (Ibid., p.57), iv) problems among labour unions, exploitation and imperfect competition (Ibid., p.58), and v) the doubt concerning the competitive equilibrium: producer’s equilibrium → industry’s equilibrium (Ibid., pp.59–60).

In reference to these critical points raised by Kaldor, we discuss the competitive equilibrium problem of (v). We separate Kaldor’s argument of (v) into a) the concept of industry and b) the concept of the individual producer and explain those concepts one by one.

a) The concept of industry

J. Robinson’s concept of an ‘industry’ is based on the assumption that the products of different firms consist of a ‘chain of substitutes’ surrounded on each side by a ‘marked gap’. Such a boundary demonstrably exists for each producer. However, there is no reason to assume that this boundary is the same for any group of producers or that the sensitivity of demand for the products of any particular producer is of the same order of magnitude with respect to the prices of any group of the producer’s rivals (Ibid., p.59).

b) The concept of individual producer

Kaldor criticized J. Robinson’s individual demand curve as follows. The traditional ‘market demand curve’ for a certain product is not of the same type as the imagined demand curve that is relevant in determining the actions of an individual producer. The market demand curve is a functional relationship between the price and the amounts bought from a particular producer. The imagined demand curve is the image of this functional relationship as it exists in the mind of the entrepreneur. In brief, the imagined demand curve is more or less elastic and discontinuous, whereas the real demand curve is continuous. The reason that J. Robinson excludes this difference is that she assumed perfect knowledge and perfect information (Ibid., pp.59–60).

If we attach importance to the point that the imagined demand curve is more or less elastic and discontinuous, we presume that Kaldor assumed the situation of Game Theory or Oligopoly. Because this is much the same argument as Sweezy advanced with the “kinked demand curve”. Sweezy insisted the following: ‘Mr. Nicholas Kaldor has suggested the name “imagined demand curve” for the concept which is applicable to the oligopoly case, and in this article I propose to follow this usage’ (Sweezy 1939,404).
In Kaldor's view, the central problem of competition in an 'imperfect market' is associated with the firm's price-quantity strategies, which are given by their relationship with their rivals and their expectations. He found in J. Robinson's analysis a negligence of the interdependence among firms in an oligopolistic situation.

In that manner, Kaldor criticized J. Robinson's argument by referring to the imagined demand curve. The imagined demand curve is a basic element of the coordination problem of a firm because it is relevant to its decision-making and involves a dynamic character. Thus, early Kaldor challenged the prevalent thinking of equilibrium economics. In Kaldor's view, J. Robinson's theory of imperfect competition remained dominated by the concept of equilibrium, in settling the equilibrium of individual firms and the equilibrium of an industry.

III-2 Kaldor vs. Chamberlin on Market Imperfection and Excess Capacity

Kaldor appreciated Chamberlin's *Theory of Monopolistic Competition* more highly than J. Robinson's *Economics of Imperfect Competition* because Chamberlin considered product differentiation and firm strategy from the perspective of independent decision-making of a firm. However, also in this case, Kaldor adopted a critical attitude. This is referred to as 'Kaldor vs. Chamberlin'.

Kaldor's first critical essay on Chamberlin is entitled 'Market Imperfection and Excess Capacity' (Kaldor 1935). It contains four points of criticism: i) the interrelations of the demand for various producers' products, ii) consumer preferences evenly distributed over the entire field and a firm under perfect competition and perfect information, iii) institutional monopoly with identical costs, and iv) excess supply and economies of scale. We explain them successively.

i) Interrelationship of the demand for various producers' products

Kaldor suggested that products are differentiated and not mutually connected as a chain of substitutes. 'No doubt, in most cases, the products of various producers selling the same sort of goods are not perfect substitutes for each other in the sense that the slightest price difference would eliminate all demand for the products of higher-price producers' (*Ibid.*, p.66). Kaldor reinforced that criticism by noting the following three characteristics of realistic products and purchasers: a) slight differences in the products themselves, b) differences in the geographical locations of the producers in cases where the consumers themselves are distributed over a broader area, and c) a certain inertia on the part of the buyers themselves, who will require either some time or a certain magnitude in the price difference to consider changing their behavior (*Ibid.*, p.66).
ii) Consumer preferences evenly distributed over the entire field and a firm under perfect competition and perfect information

In Kaldor’s view, an entrepreneur assumes an imagined demand curve without depending on perfect competition or perfect knowledge, precisely because consumer preferences are not evenly distributed over the entire field. Consequently, if new firms enter the field, individual demand curves cannot shift to the left without changing their slopes. Kaldor separated cases of divisibility and those of indivisibility. In the divisibility case, in which economies of scale are completely absent, perfect competition must necessarily establish itself solely as a result of the free play of economic forces, while in the indivisibility case, in which economies of scale exist, the demand elasticities for individual producers become infinite. For that reason, new firms will cease to enter the field (Ibid., pp.70–72).

iii) Institutional monopoly with identical costs

Kaldor thought that ‘institutional monopolies’, to which Chamberlin had referred, consisted of patents, copyrights, trademarks or even a trade name. Therefore, each firm has a different cost curve in the case of institutional monopolies. However, Chamberlin’s argument contains ‘the uniformity assumption’ that the relative costs of producing different varieties must be the same for different producers. Consequently, their cost curves for each single variety must also be identical (Ibid., pp.72–74). In brief, Kaldor criticized Chamberlin’s uniformity assumption.

iv) Excess supply and economies of scale

Kaldor asserted that, in most cases, the development of an industry is promoted by ‘specialization’ or ‘disintegration’, which renders the demand curve for each single product considerably more elastic. This will eventually engender a state in which there is little ‘excess capacity’; that is, given the number of different products that are produced simultaneously by each firm, an increase in the output of all these products would reduce the cost per unit (Ibid., pp.76–79).

Thereby, Kaldor suggested the following: As the number of firms increases because of new entrants, each firm ‘necessarily makes the chain of substitutes tighter’ (Ibid., p.68), thereby increasing the sensitivities not only of the existing competitors but also potential competitors. These arguments are illustrated with the help of Fig. 1 and Fig. 2.

5 Kaldor insisted that the argument of excess supply was inapplicable to welfare economics (Kaldor 1935, 79–80). In this regard, Kaldor was influenced by Robbins on the impossibility of Interpersonal Comparison of Utility. This is related to Kaldor’s new welfare economics (Kaldor 1939).
Because marginal cost is constant under the divisibility case, many firms enter the market. The demand curve becomes more elastic by the imagined demand curve (D_0→D_1). The price changes from P_0 to P_1. Then it approaches marginal cost. Ultimately, perfect competition appears.

If indivisibility and scale economies pertain, the price elasticity of demand is near \( \infty \) (D_0→D'_0). It is therefore difficult for new firms to enter. If an imagined demand curve is assumed in this case, potential competition ceases to exist. Consequently, oligopoly appears.

Chamberlin refuted Kaldor’s arguments in ‘Monopolistic or Imperfect Competition’ (Chamberlin 1937) with regard to the following three points: (i) the elasticities of individual demand curves, (ii) divisibility and indivisibility and (iii) the incompatibility between free entry and product differentiation.

(i) The elasticities of individual demand curves

Chamberlin refuted Kaldor’s idea that if the number of firms increases, the individual demand curves become more elastic to show perfect competition; he considered Kaldor’s concept of ‘in-between products’ to be inappropriate taking into account the expansion of the area in this geographical example. In addition, even when the products might easily be regarded as coming ‘closer together’ in the case of numerous producers, the resulting situation does not necessarily approach pure competition because the slope of the demand curve is determined based on consumer valuation (Ibid., pp.563–564).
(ii) Divisibility and indivisibility

Chamberlin criticized the separation of divisibility and indivisibility as being insignificant because, although Kaldor's divisibility was explained by a horizontal cost curve and the demand curve's increasing elasticity, if the demand curve is not horizontal, it would lead to the absurd result of there being 'an infinite number of infinitesimally small firms' (Ibid., p.565). The demand curve is not horizontal if the buyers are infinitely divisible. In addition, as compared with buyers, sellers would not become more numerous and would not come closer together (Ibid., p.565). These are the reasons with which Chamberlin refuted Kaldor's argument.

(iii) Incompatibility between free entry and product differentiation

Chamberlin agreed with Kaldor on the incompatibility between free entry and product differentiation because Chamberlin recognized that there can be no freedom of entry with respect to the particular product produced by any individual firm under monopolistic competition (Ibid., pp. 566–567).

Therefore, Chamberlin generally disagreed with Kaldor except with regard to 'the incompatibility between free entry and product differentiation'. With regard to Chamberlin's critique, Kaldor again refuted Chamberlin in 'Professor Chamberlin on Monopolistic and Imperfect Competition' (Kaldor 1938) with regard to the following points: (i) the validity of the double condition, (ii) the relationship between the number of firms and market imperfection, (iii) increasing returns under imperfect competition and (iv) free entry and monopolistic competition. We will discuss each individually.

(i) The validity of the double condition

With regard to Chamberlin's criticism of J. Robinson's double condition and his clarification of the difference between imperfect and monopolistic competition, Kaldor suggested that Robinson's double condition was geometrically valid. Thus, Kaldor recognized a common format between Chamberlin's and Robinson's arguments.

(ii) The relationship between the number of firms and market imperfection

Considering that even if Chamberlin had recognized the diversity of firms when he set up the uniformity assumption, Kaldor again refuted Chamberlin's argument with regard to the following: (a) changes in the size of the competitive field, (b) changes in the density of competition and (c) confusion between the slope of a curve and its elasticity. First, regarding (a), Chamberlin assumed that even if the number of firms increases, the demand curves of the existing firms remain unchanged from their previous state. However, Kaldor suggested that if demand increases, the population density increases; consequently, the demand curve elasticity also increases (Ibid., p.84). Secondly, regarding (b), if new varieties appear, the cross-elasticities of the demands of the
existing products increase. Kaldor suggested that Chamberlin had omitted the effect of cross-elasticities from his consideration (Ibid., pp.86–87). Finally, regarding (c), Kaldor suggested that Chamberlin should consider the fact that elasticity increases as the number of firms increases (Ibid., pp.86–87).

(iii) Increasing returns under imperfect competition

Chamberlin refuted Kaldor’s view on increasing returns under imperfect competition because he considered increasing returns to be the result of monopolistic competition, and not a contributing factor to it. However, Kaldor suggested that the entry of new firms is impossible if products are differentiated; he thereby attached considerable importance to increasing returns.

(iv) Free entry and monopolistic competition

In the theory of monopolistic competition, whereby each firm has an identical cost curve and the equilibrium for a group of firms is determined, there can be freedom of entry only in the sense of freedom to produce substitutes. However, Kaldor criticized Chamberlin’s conclusion that monopolistic competition is inconsistent with free entry and considered it as no great achievement of The Theory of Monopolistic Competition (Ibid., pp.89–91).

Kaldor again refuted such arguments of Chamberlin without changing his position. Chamberlin also replied to Kaldor’s refutation, but stood his ground. It must be pointed out that Kaldor had a different viewpoint from that of Chamberlin regarding the market, which is an extremely important difference between Kaldor and Chamberlin because the former approved of Chamberlin’s omission of monopoly from monopolistic competition, although Chamberlin is inconsistent: ‘To have shown that the monopoloid situations of the real world are quite compatible with full freedom of entry, that is to say with the complete absence of particular advantages vested in particular people, I have always regarded as one of the great achievements of the Theory of Monopolistic Competition’ (Kaldor 1938, p.91). Chamberlin merely shows a tangency solution to express market imperfection as a matter of form. Chamberlin assumed complicated imperfect markets. Therefore Chamberlin’s argument system is not as simple as Robinson’s double condition. However, Chamberlin’s argument formally expresses the same world as J. Robinson’s does.

We recognize that Kaldor and Chamberlin are dissimilar, but Chamberlin revised and modified ‘Monopolistic or Imperfect Competition’ in the ninth chapter of The Theory

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6 Stigler felt so because Chamberlin could not reduce his picture of reality to a manageable analytical system: his arguments required the two assumptions of “uniformity” and “symmetry”. Stigler’s point is identical to Kaldor’s critique of Chamberlin.
of Monopolistic Competition, fifth edition. Kaldor is believed to have strongly influenced Chamberlin because Kaldor’s criticism compelled Chamberlin to modify the difficulties in the entry of new firms by product differentiation and turn to oligopoly. In addition, if we consider that J. Robinson’s theory of imperfect competition and Chamberlin’s theory of monopolistic competition are important solutions to the cost controversy, Kaldor’s theoretical modification of their theory is a very significant contribution.

IV Conclusion

Summary

1) With regard to the cost controversy, Kaldor did not explain the equilibrium of an industry and the disequilibrium of an individual firm using Marshall’s concept of a representative firm; instead, he posited a dynamic general equilibrium of the firm with the role of the entrepreneur. In addition, he adopted a critical attitude toward J. Robinson’s Theory of Imperfect Competition, which reconstructed Marshall’s problem. In this topic, Kaldor was not indebted to Cambridge economists but to LSE economists: Young and Robbins.

2) With regard to Marshall’s stationary state, Kaldor focused on the following three points: (i) indivisibility and increasing returns, (ii) external economies, and (iii) the indeterminateness of a firm’s coordination. Moreover, he showed that the optimum output is unable to attain the minimum long-run average cost. In addition, Kaldor devised a unique theoretical mechanism of an imagined demand curve and suggested the dynamic character of a firm.

3) Kaldor appreciated Chamberlin’s argument more highly than Robinson’s in terms of a firm’s subjectivity, product differentiation and strategy. Kaldor separated divisibility and indivisibility with regard to the imagined demand curve and then modified Chamberlin’s theory of monopolistic competition theoretically so as to lead necessarily to an oligopoly. Therefore, Kaldor’s early view is very interesting, particularly when we consider the subsequent evolution of the theory of the firm.

For the reasons described above, Kaldor’s early theory of the firm is not only a fresh theory in the cost controversy but also a valuable contribution. It addresses the concepts of increasing returns as well as ideas of dynamic characteristics of a firm that is dependent on market imperfection. The idea of the indeterminateness of a firm’s coordination and an imagined demand curve are the manifestation of his critical attitude toward the neoclassical economic theory that presumes perfect foresight and
perfect information. The concept of market imperfection with regard to indivisibility and increasing returns is a severe criticism against the concept of perfect competition that is supported by neoclassical economics. Indeed, Kaldor accepted the Austrian economics of LSE and Young's concept of increasing returns in order to depict a near-real world. Based on them, Kaldor presented a theory of the firm that has extremely important implications for equilibrium economics.

However, on the other hand, although Kaldor's arguments are helpful in developing the dynamic character of a firm on the basis of coordination and the imagined demand curve, it is problematic whether we can regard Kaldor as fully aware of the essential character of a firm. His works preceded the famous Coase's article (Coase 1937). If we consider the organization of a firm from the viewpoint of Coase's essay, we cannot suggest the coordination of a firm, which Kaldor insisted was 'indeterminate'. In this context, it is doubtful whether Kaldor's theory actually represents the theory of the firm. In addition, the decision-making in Kaldor's firm depends on the maximizing principle of \( MR = MC \). Thus, his theory is amenable to marginal productivity theory. Kaldor's argument is central not to a firm's organization but to its dynamism.

In the late 1930s, Kaldor was attracted by a new tide around Keynes and did not continue an extensive research on the theory of the firm because Kaldor recognized several limitations in the Austrian subjectivism. It is regrettable that he did not complete his research in this area if we think that the later Kaldor intended to connect Keynesian economics with market imperfection (Kaldor 1983). Nevertheless, we can conclude that Kaldor's early theory of the firm contained plenty of possibilities.

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7 Hicks asserted the new classical's perfect competition as follows: 'it has to be recognized that a general abandonment of the assumption of perfect competition, a universal adoption of the assumption of monopoly, must have very destructive consequences for economic theory' (Hicks 1942,p.83)
Reference


