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## TOWARD A THEORY OF INDUSTRIAL RESTRUCTURING AND DYNAMIC COMPARATIVE ADVANTAGE

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Both Professor Peter Gray's and Professor Peter Buckley's papers are extremely useful in forcing us to reflect and elaborate on some of the observations and conclusions we made in our paper [Kojima and Ozawa, (1984a)], since their constructive comments provide us with fresh perspectives. They also help us to see why some of our statements—and Kojima's statements in his previous writings (e.g., 1978, 1982)—are misunderstood and misinterpreted even by those economists, including Professor Gray, who are sympathetic with our macro-theoretic framework of analysis for overseas investment activities of multinational corporations (MNCs).

1. First of all, we fully concur on a view expressed by Gray:

The micro-theoretic work of Casson, Caves, Dunning, Hymer and others is *not* a normative analysis nor is it designed as such. Micro-theoretic analyses are positive analyses . . . It is not appropriate to condemn a body of analysis for having a purpose other than that which the critic possesses although one may, legitimately, offer a normative rebuttal of the purpose . . . [Gray, pp. 125–6].

It should be made clear, first of all, that we are not offering a normative rebuttal to the micro-theoretic analyses. What should be stressed here is that the fact that the existing micro-theoretic work is a positive analysis does not “excuse” or “justify” its myopic neglect of the macro-global welfare considerations of overseas business operations by individual firms; nor will it be converted into a normative analysis once its perspective is expanded to include analyses of the compatibility of these overseas activities with macro-global welfare. A distinction between positive and normative economics is obviously not a matter of whether or not social welfare is under consideration.

For the same reason, our model presented in terms of the theory of comparative costs is not a normative analysis either, although for some reason it is erroneously so interpreted. The concept of Pareto optimality (a maximization of social welfare) enshrined in the neo-classical tools of analysis such as an efficiency locus, a product transformation curve, a contract curve, and a utility-possibility frontier is obviously a positive concept; so is the Ricardian or the Heckscher-Ohlin analytical framework of the theory of comparative costs. Our analysis is built on—and is an extension of—well-established positive economics, a position that can be summarized in the following tandem statements:

**Proposition I:** Countries gain from trade and maximize their economic welfare when they export comparatively advantaged goods and import comparatively disadvantaged goods.

Proposition II: Countries gain even more from expanded trade when superior entrepreneurial endowments are transferred through FDI by multinational corporations (or through non-equity types of transactions such as licensing and plant exports) from the home countries' comparatively disadvantaged industries or segments in such a way as to improve the efficiency of comparatively advantaged industries or segments in the host countries and to contract comparatively disadvantaged industries or segments in the home countries.

The conventional Heckscher-Ohlin doctrine of comparative advantage assumes no international mobility of factors (hence no problem of *factor-transfer-caused* disturbances in the existing pattern of trade). In particular, any international transfer of entrepreneurial assets (such as technology) is out of the question; since by assumption all firms are identical and homogeneous, there is, in the first place, no firm-specific entrepreneurial endowment to transfer. Technology exists, but it is industry-specific and is assumed to be identical between countries (i.e., either God is impartial in providing such identical knowledge to all countries or any knowledge generated in one economy is assumed to be transmitted *instantly* to all other economies as a public good).

On the other hand, the Ricardian model assumed different industry-specific technologies (i.e., different labor productivities) between the trading countries involved, but again no international transfer of such technology. Both the Ricardian and the Heckscher-Ohlin models of trade are thus "incomplete" *in the sense that depending on the nature of knowledge transfers, the benefit of trade can either be enhanced or reduced*—that is, in these trade models the effect of knowledge transfers on the basis for trade is left unexplored.

There have been some efforts to fill in this theoretical void. Strictly within the Heckscher-Ohlin framework of comparative advantage, it has been shown that international transfer of mobile factors (homogeneous capital and labor) lead to a destruction of the basis for trade, i.e., a complete trade-replacement phenomenon [Mundell (1957), Flatters (1972)], although there is a possibility of partial transfers of mobile factors, still leaving some basis for trade but always reducing it [Purvis (1972)].

Once firm-specific entrepreneurial endowments are introduced as mobile factors, however, their international transfers may *either* reinforce or swamp the Heckscher-Ohlin determined pattern of comparative advantage [Kojima (1975), Kojima and Ozawa (1984a)]. Together with the creation of new pieces of knowledge (entrepreneurial endowments) via research and development activities and "learning by doing," the dissemination of such knowledge creates dynamic forces in world trade, the *dynamic* determinants of trade that interact with the *static* determinants posited and so elegantly analyzed in the Heckscher-Ohlin theory of trade.

A study of the creation and international dissemination of entrepreneurial endowments is the key to developing a theory of dynamic comparative advantage, and its essence is stipulated in Proposition II. That is, the basis for trade founded on dynamic comparative advantage expands whenever entrepreneurial endowments are created and internationally transferred in such a way as to contract comparatively disadvantaged industries in the home country and simultaneously expand comparatively advantaged—both actual and potential—industries in the host countries.

Micro-theoretic models by nature miss this important global implication of entrepreneurial factor transfers, and we agree that this is not their fault—just as hereditary near-sightedness is not anyone's fault but nevertheless is still an unfortunate disability.

There is no denying the powerfulness and usefulness of micro-theoretic analyses of multinational corporations. Transfers of entrepreneurial endowments are after all carried out by the individual firms themselves. The behavior of private profit maximization (or cost minimization) is without doubt crucial for understanding the nature and direction of entrepreneurial factor transfers. But micro-theoretic analyses need to be related to a macro-theoretic framework and their macroeconomic implications fully explored, for economic forces operating at *both* the micro- and the macro-levels interact closely. The correspondence principle between comparative costs and comparative profit rates [Kojima (1978), pp. 108–13], for example, clearly shows that a trade-oriented FDI stressed in Proposition II results in greater profitability at the firm level, while an anti-trade-oriented FDI leads to negative profits in a given set of circumstances. Moreover, the product life-cycle theory of trade [Vernon, (1966)] demonstrates a process through which the initial trade advantages created in a leader country in its comparatively advantaged industries (R & D-based ones) are destined to be quickly eroded as a result of technology diffusion in an anti-trade-oriented fashion. This model reveals a conflict between private and social interests and illustrates under what conditions the “first-best” situation posited in Proposition II may not be realized. A series of recent empirical studies by Kojima (1985a, 1985b) on the comparative nature of Japanese and U.S. direct investments also reveal the composite influence of micro and macro factors.

2. We also fully concur with Gray's statement that “The micro-theoretic analysis of MNCs recognizes as a fundamental premise that atomistic competition is not compatible with the existence of MNCs and that MNCs must have some potential detrimental effect on global efficiency in terms of resource allocation” [Gray, p. 126].

To illustrate a gap between social and private benefits, Gray introduces an interesting distinction between the “production-possibility” curve and the “production-feasibility” curve and observes that the latter always lies inside the former “as long as one market is less than perfect,” a distinction intended to illustrate the argument that the creation of knowledge (firm-specific) in a market economy requires an appropriate reward as an incentive in the form of monopolistic profit [Johnson (1970)]. A gap between the two product transformation curves is no doubt very useful to illustrate the social cost of generating knowledge, a cost that must be incurred to assure a much greater social benefit that accrues from an outward expansion of both types of product transformation curves.

The same point is stressed by Buckley:

. . . Welfare losses arise where multinationals maximise monopoly profits by restricting the output of (high technology) goods and services and where vertical integration is used as a barrier to entry . . . .

It is, however, much more important to see the dynamic elements in the Reading paradigm. The internal market allows greater inter-plant and functional cooperation (e.g. between production, marketing and R & D) and in the long run this will stimulate both the undertaking of R & D and its effective implementation in production and marketing. Consequently, dynamic welfare improvement is likely to result [Buckley,

p. 119].

Yet these analyses are concerned merely with the *allocative* efficiency of resource use *within* a given economy and are far from considering a more important question of trade-compatible structural adaptation or *adaptive* efficiency on a *global* basis—more important in the context of international economic relations.<sup>1</sup> The impact of multinational corporations' transfers of corporate assets on world welfare hinges on the manner in which the home and host countries' productive capacities are affected by such transfers, that is, whether or not their industrial structures alter in a manner complementary with trade so as to maximize the benefits of trade-induced specialization and exchange. Here, what we are concerned with is *not so much the allocative efficiency of resources within a given economy but the adaptive efficiency of the individual economies for pro-trade-oriented industrial restructuring.*

As postulated in Proposition II, when the home country pursues overseas investment in its comparatively disadvantaged industries (that is, in the host country's comparatively advantaged—actually and potentially—industries) by shifting domestic resources toward its comparatively advantaged industries at home, thereby reshaping both the home and the host countries' "production-feasibility" curves in a more skewed way to each other, the basis for trade will expand as their domestic marginal rates of transformation further diverge. This is the key aspect of *FDI-induced adaptive efficiency* leading to an expanded gap between the two countries' marginal rates of transformation (i.e., an outward expansion of what may be called the world's "production-feasibility" curve)—in contrast to the notion of intra-economy allocative efficiency introduced by Gray in terms of a gap between a country's "production-possibility" curve and its "production-feasibility" curve.

Needless to say, adaptive efficiency is not limited to the FDI-induced type. MNCs' ability to continue to create new knowledge in their comparatively advantaged industries (in return for their monopolistic profits made at the cost of static allocative efficiency) at home is needed if the world is to thrive on shifting patterns of comparative advantage—and particularly if the advanced countries are to absorb economic resources released from their contracting comparatively disadvantaged industries so as to maintain full employment and to prevent the protectionism that might otherwise emerge.

Hence in advancing our analysis as a theory of industrial restructuring and dynamic comparative advantage we need still another proposition:

**Proposition III:** The process of comparative-advantage-augmenting transfers of entrepreneurial endowments is enhanced when the home countries are capable of generating new goods or industries in which they can

<sup>1</sup> In a different context, *adaptive efficiency* was stressed by Robin Marris and Dennis C. Mueller as a new concept as distinct from *allocative efficiency* and *X-efficiency* [Marris and Mueller (1980)] and we are borrowing their way of distinguishing between allocative and adaptive efficiency: "Clearly, a market economy is not a simple problem-solving machine. It is what cyberneticists have called a Self-Organizing System, a system that can and does modify its own structure and programming in the course of and as a result of its own operations. Economic theory has traditionally ignored self-organizing processes and has traditionally concentrated attention on the behavior of systems with given structures. Intuitively, however, it seems likely that the economic welfare of the citizens of the modern state is as likely to be affected at least as much, if not more so, by the way economic structure develops as by the performance of the system within a given structure. This consideration leads to a third concept of efficiency—which might be called "adaptive efficiency"—to be added to two existing concepts of allocative efficiency and what is now called X-efficiency" (p. 34).

continue to maintain comparative advantage and fully employ economic resources, resources both newly accumulated and released from comparatively disadvantaged industries.

Those industrialized countries that are incapable of this type of industrial adjustment tend to discourage imports in their comparatively disadvantaged sectors and may even force foreign firms to make anti-trade-type FDI as a means of maintaining employment. In such a case, inter-economy adaptive efficiency is clearly sacrificed, and here Gray's observation is very much pertinent: "Preservation of a reasonably open international trading and investment system in a world of rapid and uneven spread of technology and of rapid development of production technology will require conscious adjustment-effecting or adjustment-facilitating policies to be undertaken in all countries but particularly in Europe and North America" [Gray, p. 132]. This is in line with the concept of "positive adjustment policies" introduced by OECD (1983). Yet how "conscious" these adjustment policies can be is a controversy that remains unresolved. This is the very area where normative analyses override positive analyses.

Our position expressed in the three propositions is concerned with global economic welfare—contrary to Buckley's interpretation that national advantage is our focus. We are stressing the role of FDI or other forms of entrepreneurial endowment transfers as a catalyst in achieving dynamic comparative advantage for *both* the source and the host countries *simultaneously*. Our interest is in an outward expansion of the world's "production-feasibility" curve over and above the level attainable in the Ricardian or the Heckscher-Ohlin "trade-only" situation.

3. In transferring entrepreneurial endowments multinational corporations may be a more efficient conduit than arms-length market transactions: "It is quite possible that FDI is capable of generating better informational flows among different units of the same corporation than between two firms of different national origins communicating at arm's length" [Gray, p. 129]. This aspect of transactional efficiency has been well studied in micro-theoretic analyses [Magee (1977)]. Yet the issue of transactional efficiency may divert micro-theoretic economists' attention from the concept of inter-economy adaptive efficiency stressed in Propositions II and III. However efficient the multinational corporations may be in transplanting their corporate resources in the host countries, they may be doing so in the *wrong* industries, i.e., their home country's comparatively advantaged industries; the result is a destruction of adaptive efficiency. In such a case, MNCs' pursuit of microeconomic transactional economies is made at the loss of macro-global adaptive efficiency, aggravating the problem of industrial adjustment especially on the part of their home countries.

As Professor Gray puts it, "But the MNCs merely react to the conditions which they face and obey the micro-theoretic behavior patterns identified in the positive analyses of Casson *et al.* Welfare-reducing FDI is not the 'fault' of MNCs but is merely a rational response to the environment in which they must operate" (p. 131). We are not blaming MNCs' "rationality," but simply providing a macro-theoretic frame of analysis within which we can examine whether their behavior may prove welfare-reducing or welfare-increasing for the world as a whole. Thus our macro-theoretic model is meant to be *complementary* with—and not a substitution for—the micro-theoretic analyses, as stressed in our effort to integrate both approaches, i.e., our effort to construct a micro-macro composite model of trade and

investment.

Our approach explicitly recognizes the MNCs as a crucial catalyst for industrial restructuring. They are no doubt both the creators of market imperfections and the reactors to externally imposed imperfections. At the same time, they can be the enlargers or destroyers of the basis for trade, depending on whether they originate in the home country's comparatively advantaged or disadvantaged industries.<sup>2</sup> The MNCs thus significantly affect volume of trade and in our approach the criterion of welfare maximization is indeed volume of trade. But it is obvious that such trade can never occur "in a free trade, restrictionless, frictionless world," despite Buckley's erroneous interpretation (p. 120).

4. As Professor Buckley correctly points out, our analysis of Sogo-Shosha [Kojima and Ozawa (1984b)] did employ the micro-theoretic approach of the Williamson type (1975) and the Coasian concept of internalization—against the backdrop of the co-operative mode of business arrangement stressed by D. G. Richardson (1972). For example, we observe:

. . . [The general trading companies'] investment approach is systems-focussed, that is, it aims to create "closed" markets in which they can enjoy exclusive trading opportunities. With the use of overseas investments—both equity participation and direct loans—the trading companies manoeuvre to inject elements of imperfection into the market-place, yet without causing total market failures or disruptions. On the contrary, they do create and expand markets that did not exist before. But these markets are [as] exclusively [as possible] controlled not by means of organisational internalisation (that is, controlled within the firm) but by closely-knit, long-term collaboration with semi-autonomous business units (partially owned by and/or in debt to the trading companies) [Kojima and Ozawa (1984b), p. 75].

. . . This phenomenon may also be described as "market-like or quasi-market integration" as against "hierarchical intra-firm integration" (p. 81).

Without doubt, the micro-theoretic approaches as advanced by the Reading school and others do help explain the behavior of Sogo-Shosha, and we are grateful for their theoretical contributions.

Our analysis is, however, incomplete in two aspects. First of all, we agree with Buckley's observation that "Richardson's conceptual framework requires operationalising . . ." (p. 122). But the Richardsonian mode of organization is too important to be dismissed simply as "partial internalization."

Furthermore, we did not adequately stress the macroeconomic roles of Sogo-Shosha in the process of economic development of both the home and the host countries—giving an impression that their behavior can be analyzed fully within a micro-theoretic framework alone. After all, Sogo-Shosha are the product of *macroeconomic circumstances*, a national policy institution created out of Japan's economic backwardness, as a catalyst of trade expansion and industrialization [Ozawa (1985b)].

Nevertheless, we did mention some key macroeconomic roles played by Sogo-Shosha [Kojima and Ozawa (1984b), pp. 71–87]:

(1) Japan's general trading companies are brokers for the transfer of standardized

<sup>2</sup> This is the reason why we are using the world "production-feasibility" curve instead of the world "production-possibility" curve, in line with Professor Gray's distinction between the two concepts. Our three propositions set out the first-best conditions as the upper limit, but the real world obviously lies below the limit.

labor-using technologies to the developing host countries' labor-intensive industries (i.e., their comparatively advantaged ones).

(2) The general traders are the active developers of exportable resources in the resource-abundant countries (i.e., an expansion of the host countries' comparatively advantaged industries) and serve as the distributors of such resources to the outside world, including the Japanese market.

(3) Because of their wide-flung networks of branches, subsidiaries, and affiliates throughout the world, Sogo-Shosha are better equipped than any other institution to deal with counter-trade, thereby contributing to the global exchanges of goods and services.

(4) Trading companies often organize consortiums of companies (joint participants) for large-scale resource or regional industrial development projects. No single firm may be quite large enough or efficient enough to provide all the necessary functions (e.g., construction, installation of plants, equipment and machinery, financing, and marketing of extracted resources). Yet each firm does have a comparative advantage in performing a *particular* function. (In other words, the principle of comparative advantage applies equally to the organization of an investment consortium [Ozawa (1979), pp. 186–7].) The trader-arranged *group-integrated* package of services is thus superior to the *intra-firm, internalized* package of services.

(5) Thanks to their long experience in dealing with a wide variety of products and simultaneously handling both exports and imports, the trading companies have developed a keen sense of comparative costs. They make buying and selling decisions with the international division of labor in mind as a matter of routine. This orientation is natural—and in fact profitable—for them, since they can create many more opportunities to earn commissions if they assist trading countries on the basis of comparative costs rather than absolute advantage.

All these features point up the fact that Sogo-Shosha's market-creating capacity derives essentially from their ability to enhance the patterns of comparative advantage among the countries by way of fostering inter-economy adaptive efficiency—in addition to whatever transactional economies they can achieve at the micro and micro-micro levels (allocative efficiency and X-efficiency). General trading companies are by nature comparative-advantage-augmenting institutions. Again, micro-theoretic approaches, without the supplementary macro-theoretic framework, miss this important source of global welfare.

A study of Sogo-Shosha, the unique trade-transactional specialists, provides an ideal opportunity to present a case of compatibility between private and social benefit—and what is more important, demonstrate the complementarity between micro- and macro-theoretic approaches (a work we have not yet fully completed).

5. In connection with adaptive efficiency, we can attach a new meaning to the concept of “appropriate” technology. In our macro-theoretic framework, “appropriate” technology transfers mean comparative-advantage-enhancing ones, while “inappropriate” transfers mean comparative-advantage-reducing ones.

(In the “appropriate” case, the world's “production-feasibility” curve expands farther than for the Ricardian or the Heckscher-Ohlin trade model, while in the “inappropriate” case it contracts toward the position equivalent to the Ricardian or the Heckscher-Ohlin model, a situation where trade is completely replaced by factor transfers.)

It should be noted, however, that comparative-advantage-enhancing technology can be



transferred other than through the medium of wholly or majority-owned equity investments by multinational corporations. Some of the corporate resources supplied in a complete package under whole or majority ownership may be readily available locally or can be purchased separately at lower costs from other sources—*more economically from the point of view of the host countries if not in a more profit-maximizing manner for the MNCs*. Micro-theoretic models have so far been concerned almost entirely with the profit-maximizing (or cost-minimizing) behavior of MNCs from the latter's point of view only, and not much attention has been paid to the optimizing behavior on the part of the host countries.

6. To avoid necessary dependency, indeed, developing countries have in recent years been “unbundling” the package of corporate supplies so as to secure them separately from different sources in so-called “new forms of investment”—in forms such as minority-foreign-owned joint ventures, licensing agreements, turnkey operations, production sharing, management and marketing contracts, subcontracting, and other contractual arrangements [Oman (1984)].

In our macro-theoretic framework, it is demonstrated that the incidence of new forms of investment (particularly, minority-owned joint ventures, turnkey operations, subcontracting, managerial and marketing contracts, and technical assistance contrasts) is more frequent as the modes of overseas business operation in the home country's comparatively disadvantaged or comparative-disadvantage-destined industries than in its comparatively advantaged industries, and that new forms are usually chosen by the firms as the “strategic initiative” (or “first best”) strategies in the former industries, while they are more often than not adopted as “defensive reactions” (or “second-best” alternatives) in the latter [Ozawa (1984)]. There is thus a strong *causal* link between forms of business engagement and degree of comparative advantage or disadvantage, the former as a function of the latter. This macroeconomic determinant of the forms of engagement should be consistent—and complementary with—the Reading school's “transactions cost minimisation” determinant.

In the new forms of corporate resource transfers, furthermore, mutually beneficial—more equitable in benefit sharing—cooperative arrangements are often made among a number of key role players: for example, the host governments, their state enterprises, or local business interests (as providers of entrepreneurship and local resources and markets); multinational corporations (as suppliers of technology, management, and access to export markets); and third-party financial institutions such as the World Bank, regional development banks, and national financial agencies (as providers of financial capital and expertise—on concessionary terms).

With the participation of many different players in the organization and management of overseas ventures, the traditional micro-theoretic analysis that focuses *only* on MNCs is becoming increasingly *partial* as the MNCs' domain of influence contracts. The days when the MNCs could ride roughshod over the host economies are clearly over, since other players now act as countervailing forces. Japan's relatively high propensity to adopt the new forms of investment is partly a reflection of its latecomer entry to the arena of multinationalism where the multi-player game already had its own set of rules and partly a product of its rapid industrial restructuring in the postwar period [Ozawa (1984)].

A broad analytical framework that treats MNC-focused micro-theoretic analyses only as *one* component and includes the optimizing behaviors of other players as *additional* components needs to be constructed to explain the rising prevalence of new forms of international

investment and their coexistence with the traditional form [Momigliano and Balcer (1983)]. To meet this conceptual requirement, a general analytical framework is presented by combining as explanatory variables (a) the governance factors of both the host and the home countries, (b) the macroeconomic growth dynamics of industrial restructuring that pushes out comparatively-disadvantaged industrial activities abroad, and (c) the firm-level drive to exploit superior ownership advantages through market internalization in comparatively advantaged industries [Ozawa (1985a)]. This model, though simple and tentative, captures the emergence of different forms of direct overseas operations fundamentally as the adaptive—and interacting—behaviors of both multinationals and the host countries—and equally important, of those positive-adjustment-oriented home countries.

It is indeed encouraging to see the recent thrust of Professor Buckley's research that focuses on the fact that "alternative strategies rest on the ability of firms and host nations to build satisfactory institutional forms partially to reconcile competing interests" (p. 122).

### *Conclusions*

The theory of FDI is still in its infancy, and is expected to further evolve as the real world itself goes through adaptive changes. Micro-theoretic approaches continue to treat it as *a theory of the firm*, with its theoretical cornerstone rested on the Coasian concept of market internalization [Coase (1937)]. Much earlier, Stephen Hymer, on the other hand, considered that it belonged to the economics of industrial organization (as *a theory of the market structure*) and emphasized the monopolistic market structure as the key determinant of the behavior of MNCs [Hymer (1960), Dunning and Rugman (1985), Teece (1985), Lecraw (1985)]. All these micro-theoretic conceptual orientations have helped shed—and continue to shed—much light on the nature and operational behavior of MNCs.

Yet the MNCs' role as the major transmitter of comparative advantage—either through the traditional FDI or through new forms—from advanced to less developed countries (that is, as an adjustment mechanism of industrial structures), sometimes reinforcing the basis for trade and other times weakening it, has not been fully explored in a cohesive analytical framework. As John Dunning and Alan Rugman observe, "Today it is widely recognized that the theory of FDI (i.e., international production) is primarily about the transfer of nonfinancial and ownership specific intangible assets by the MNE, which needs to appropriate and control the rate of use of its internalized advantage(s)" [Dunning & Rugman (1985), p. 228]. The widely recognized theory of FDI is thus moving in the right direction but still short of recognizing the importance of inter-economy adaptive efficiency emphasized above; it is still in the intellectual straightjacket of micro-theoretic partial optimization with the focus only on the interest of MNCs.

Our effort is to provide a much broader conceptual framework by treating the theory of FDI as *a theory of industrial restructuring and dynamic comparative advantage*; it is designed to supplement the micro-theoretic approaches. Industrial adjustment, the need for which is largely caused by a rapid international dissemination of entrepreneurial endowments, is no doubt one of the most pressing macro-global issues of today's world economy. We identify this as one of "the real issues" [Buckley, p. 122]. Recognition of this issue

will help us unite our "separate" frameworks into a fully integrated one.

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