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**OPEN DUALISM: MODE OF OPERATION\***

by

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**\*Prepared as Chapter 8 in "The Development  
of the Open, Dualistic Economy."**

## CHAPTER 8

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## **1. INTRODUCTION**

The economy's structural form, and the mode of operation to which this structure gives rise, are basic components of our evolutionary view of transition growth. In the previous chapter we discussed the structural form of open dualism. We adopted an aggregate national income accounting system--represented by the linear graph of Diagram 2 in Chapter 7--to depict the structure most relevant for our analysis. In this structure there are five major sectors (industry (Y), agriculture (X), government (G), foreign (F), and finance (Z)) linked by 16 intersectoral flows. We have identified a number of economic circulations from this structure, and these were summarized and classified in Chapter 7, Table V. The purpose of the present chapter is to discuss the economic significance of these circulations (which in combination comprise the economy's mode of operation) in the context of transition growth. For the discussion in this chapter, therefore, we will frequently refer back to Diagram 2 and Table V in the previous chapter.

From the outset, we emphasized that economic circulations must not be viewed as mere mechanical devices involving flows of goods and services. Rather, each circulation is interpreted as a particular way of economic life--in our terminology, a mode of operation

within the economy--involving the participation of a large number of people. The growth relevance of circulations becomes apparent only when they are viewed in this way, and the subject of this chapter, therefore, requires this interpretation. The basic question we address is what sources of forward thrust or growth accomplishments are implied in each particular mode of operation. We argue that all circulations have definite growth-promotion effects and, hence, analysis of the transitional process must be focussed upon these growth-promotion effects.

In seeking to relate a circulation, as a mode of operation, to the economy's acquisition of growth momentum, we must first identify the potential sources of growth. One source, stressed--perhaps overstressed--in contemporary growth theory, is a society's austerity, indispensable for capital accumulation. To this traditional emphasis we add three other key ingredients of economic growth: the acquisition of technological know-how, organizational ability, and the enhancement of a society's resource base. The transition to modern economic growth requires that a society show significant progress on each of these sources of growth. In our frame of reference, therefore, the growth-relevance of any "mode" in the economy's operation must be judged in terms of its contribution to austerity, technology, organization, and

resources. The development of this intuitive notion is the substantive issue attacked in this chapter.

This task will be undertaken by discussing from this viewpoint each class of circulations presented in Table V of the previous chapter. (It will be helpful to readers to review the technical meaning of each of the notations used in that table.) In this chapter we discuss, in the following order, the classes of private circulations<sup>1</sup> mentioned in the previous chapter and classified in that chapter's Table V:

(i) Private Current Circulations (Columns 1 and 2):

a) Bilateral:  $C_1, C_2,$  and  $C_3$

b) Triangular:  $C_4, C_5$

(ii) Private Financial Circulations (Columns 3 and 4)

a) Domestic:  $Z_1, Z_2, Z_6, Z_7$

b) Foreign:  $Z_3, Z_4, Z_5, Z_8, Z_9, Z_{10}$

This order of presentation, in which circulations are listed in order of decreasing importance of their growth relevance, betrays a viewpoint that will become more apparent as the chapter proceeds.

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<sup>1</sup>Public circulations will be treated in a later chapter.

To state this viewpoint frankly, we believe that in a private enterprise society, private operation is more important than public, and in the private sector current transactions are more basic than financial.

## 2. PRIVATE CURRENT CIRCULATIONS<sup>2</sup>

### 2.1 ACCOUNTING CONTENT

In a private enterprise society, forces which produce growth consequences necessarily operate mainly through the market. Public economic forces may play a role in such a society, but their role is essentially ancillary to the market. The most basic and significant market activities are exchange, and all private current circulations represent various types of exchange transacted among the economy's sectors.

To proceed with the exposition, let us accept three given macroscopic sectors, two of which are domestic--industry, (Y), and agriculture, (X)--and one foreign, (F). A private current circulation is a form of exchange among individuals belonging to these three sectors.

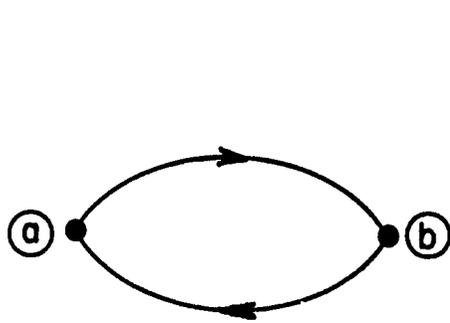
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<sup>2</sup>Throughout this section when we mention circulations, we shall mean private current circulations to which this section is addressed.

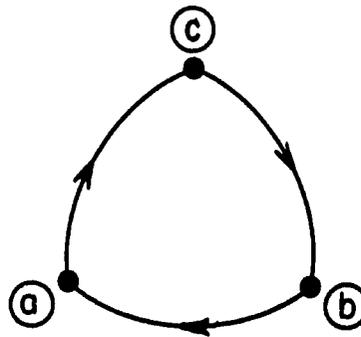
Let us begin by briefly treating a matter of technical detail. We see from Table V [Columns (1) and (2)] of the previous chapter that private current circulations may be either of the bilateral or triangular type. Abstractly, these two types of circulations are depicted in Diagram 1 where Diagram 1a represents bilateral circulations between (a) and (b) and Diagram 1b, triangular relationships among (a), (b), and (c). In the concrete example of Table V, we have identified three bilateral circulations,  $C_1$ ,  $C_2$ , and  $C_3$ , showing relationships among the three sectors, industry (Y), agriculture (X), and foreign (F). In addition, we have identified two triangular relationships,  $C_4$  and  $C_5$ , involving all three sectors. It is a simple mathematical exercise to demonstrate that at most five circuits can be identified where there are three vertices (i. e., sectors (Y), (X), (F) in our example). This may be seen from Diagram 1c which shows a "completed" linear graph with three vertices and precisely five circuits, 3 of length two and 2 of length three. Thus, identification is complete for our example covering the five circulations.

The accounting meaning of a bilateral circulation is simple. For example, the bilateral circulation  $C_2 = (XY)$  represents the important phenomenon of domestic commodity exchange between the two dualistic sectors of the economy--agriculture (X) and industry (Y).

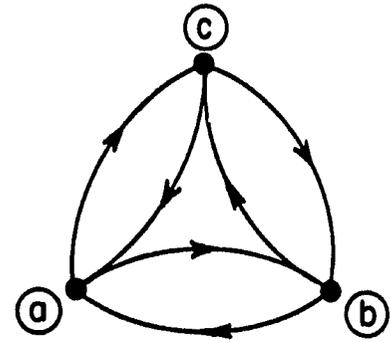
**Diagram 1: Bilateral Circuit, Triangular Circuit And Complete Linear Graph**



**a) Bilateral Circuit**

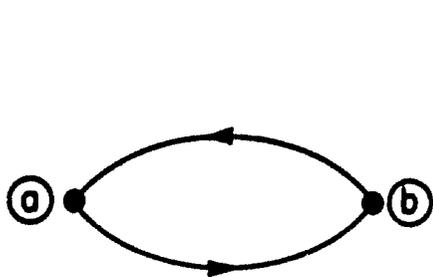


**b) Triangular Circuit**



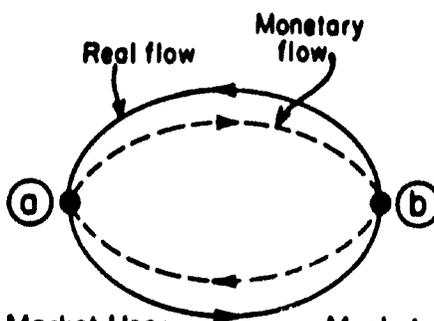
**c) Complete Linear Graph**

**Diagram 2: Growth Significance of Bilateral Exchange**



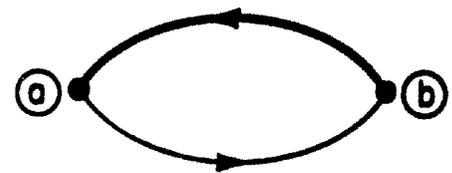
**Vent User      Vent Provider**

**a) Resources (R)**



**Market User      Market Provider**

**b) Market (M)**



**Technology Importer      Technology Exporter**

**c) Technology (T)**

Referring to Diagram 2 in Chapter 7, we observe the flow  $y_x$ , representing agricultural purchases of commodities from industry, and including both intermediate goods (N; e. g., fertilizer) and final consumer goods ( $Y_L$ ; e. g., cloth). We also observe a reverse flow of payments from industry to agriculture,  $x_y$ , representing industrial sector acquisition of agricultural commodities, also including both intermediate goods (R; e. g., raw cotton) and final consumer goods ( $X_h$ ; e. g., food). The commodity content of the two other bilateral exchange circulations, as well as those involving triangular exchange, can be similarly stated by using this diagram.

Beyond this step of accounting for the commodity content of private current circulations, there is the more important issue of their growth significance. Since the set of five circulations of this type may be presumed to have family affinity, we must begin by abstractly investigating their growth significance; i. e., as property of this family rather than as individual circulations. We approach this subject first by concentrating upon the bilateral circulations ( $C_1$ ,  $C_2$ , and  $C_3$ ), and we shall see that analysis of the triangular circulations is merely an extension of conclusions from the bilateral group.

## 2.2 GROWTH SIGNIFICANCE: BILATERAL EXCHANGE

The current nature of bilateral exchange may suggest to some that it is a phenomenon devoid of growth significance. This reaction may, indeed, be instinctive to those who view growth as essentially a matter of real capital accumulation and, hence, inevitably consider exchange as mere swapping of goods. Historical experience suggests, however, that this restricted view of growth phenomena is erroneous. In terms of the economy's mode of operation, the appearance of a functional unit representing bilateral exchange is a significant growth advance from isolated self-sufficient communities. In our review of the historical approach to growth, we noted that emergence of a mercantile-agrarian system represented a substantial growth accomplishment when compared to its predecessor, the traditional agrarian society. The very rise of mercantile activities was shown to result in increases in labor productivity, quite independent from real capital accumulation.<sup>3</sup>

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<sup>3</sup>In Table II of Chapter 2 we listed the productivity-raising effects associated with several growth forces unleashed by the emergence of mercantile activities.

The growth-promotion significance of bilateral current exchange may be analyzed in terms of three factors of strategic importance: resource complementarity, market provision, and technology transmission. Each of the three has definite productivity-raising effects. Their favorable growth impact is exerted through improving the quality and performance of human agents, particularly in regard to entrepreneurship. Thus, ultimately we shall stress the learning effects of bilateral exchange experience.

In the discussion of each of these strategic growth factors, one emphasis in our approach should be borne in mind. The abstract concept of sectors and the link between them represented by bilateral exchange (as in Diagram 1a) may give the impression of an exclusively symmetrical relationship between the two sectors. While there may be a symmetrical aspect, our discussion of the three strategic growth factors (resource complementarity, market provision, and technology transmission) will show that the asymmetrical aspects of bilateral exchange are of prime significance for growth.

## Resource Complementarity

In considering the resource complementarity facet of bilateral exchange, we find a useful point of departure in a significant contribution of Classical (and neo-Classical) economics. That body of thought explains bilateral trade between two partners (countries, or, in our context, sectors) in terms of differences in factor endowments and concludes that the greater these differences, the greater will be "gains from trade" accruing to both partners. Gains are attributed to the more efficient pattern of resource utilization in the trading "world," resulting from production specialization. The growth relevance of this argument hinges on the rather vague proposition that growth somehow is facilitated by improvement in efficiency--in the resource allocation sense. The Classical thesis, therefore, maintains that a bilateral trading pattern, itself, will promote growth by enabling trading partners to realize gains from differences and complementarities in their factor endowments.

On the whole, this Classical trade thesis envisages a symmetrical relationship between trading partners.<sup>4</sup> For analysis of

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<sup>4</sup>Minor refinements of the Classical thesis toward some degree of asymmetry have been introduced in terms of effects of consumer preference differences, for example, and country size variation upon gains from trade.

growth, however, the Classical thesis may be made more relevant and useful by adapting it to emphasize asymmetry involving massive differences in resource endowments. In particular, one of the two exchange sectors may possess a resource base so dominated by one abundant factor that only a small part of the factor can be used within that sector. Countries with a colonial heritage frequently confront this lopsided kind of resource base, in which land for one or a few particular raw-material specific products (e.g., coffee, rubber, fibers, minerals) represents their dominant resource characteristic. If exchange arises between this country and one with a more diversified resource base, a bilateral pattern of trade of a vent for surplus nature is likely to emerge.<sup>5</sup>

The asymmetrical feature of such bilateral exchange is apparent by viewing the one-resource country as a vent user; the other, as a vent provider. The growth significance of this pattern lies mainly in the implications of trade for the vent user. Trade opportunities are not merely a matter of relative advantage or gain to this disadvantaged partner; they are, indeed, the only available vehicle of growth.

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<sup>5</sup>The vent for surplus phenomenon resulting from this type of situation is familiar. See, for example, Ila Myint, "The Classical Theory of International Trade and the Underdeveloped Countries," Economic Journal, Vol. 68, June, 1958, and Richard E. Caves, "Vent-for-Surplus Models of Trade and Growth," in R. E. Baldwin et al, Trade, Growth, and the Balance of Payments (Chicago: Rand McNally and Co., 1964).

**This asymmetry between vent-user and vent-provider is fundamentally a matter of the degree of homogeneity or diversity in their resource bases. This is shown in Diagram 2a. In that diagram (a) represents the vent-using sector and (b), the vent-providing sector. The difference between the two lies in comparative resource endowments. In practice, the significance of the homogeneous resource base is that the vent user has an unskilled labor and/or highly specialized natural resource base, while the vent provider has a diversified pattern including, for example, entrepreneurship, skilled labor, and a differentiated supply of capital stock. Hence, viewed from the resource complementarity approach, bilateral exchange has very different implications for the two sectors. Such exchange enables the vent provider to acquire one particular resource (e.g., rubber) or consumer good (e.g., coffee) more economically. To the vent user, however, exchange permits the conversion of otherwise unused surplus resources into a diversified bundle of imports. Thus, the growth significance of resource complementarity is that it allows a transfer of the vent provider's resource diversity to the vent user, thus leading to a more diversified resource base in the latter sector.**

**For either domestic sector, agriculture or industry, therefore, the foreign sector definitely plays the "vent provider" role in bilateral**

exchange in our notation,  $C_2$ , representing agriculture-foreign exchange, and  $C_3$ , representing industry-foreign exchange. Access to this vent for the homogeneous domestic resources thus causes trade opportunities to be a much more critical matter for less-developed countries than for industrially advanced countries. During the transition process, however, growing resource diversification is a common phenomenon in both production sectors of the dualistic economy. As this diversification process proceeds during the transition, the "vent for surplus" thesis becomes less applicable and bilateral trade begins to assume a new growth significance.

### Provision of Markets

The resource complementarity discussion just presented abstracts from the monetary aspects of exchange. In the neo-Classical analysis of bilateral exchange, to which we referred, money was irrelevant. Thus, bilateral exchange was viewed in the preceding discussion as though it were merely a matter of barter, conducted without the use of money. By contrast, we now turn to a growth-promotion force, the provision of markets, in which the presence of money is essential. The very concept of market involves the notion of

monetary purchasing power, providing opportunities for exchange beyond the narrow confines of barter. The growth significance of market provision lies in the stimulating effects it exerts upon investment decisions. These decisions must necessarily be reckoned by entrepreneurs in terms of monetary calculus. Hence, it is apparent at the outset that monetization of the economy is a precondition for the operation of the market provision stimulus. For example, the dualistic economy's agricultural sector scope for market stimulation is limited by the extent to which that sector participates in monetized markets.

Although virtually all Classical growth analysis was conducted in real (non-monetary terms), there was some recognition of the growth significance of (monetized) markets. This recognition is clearly apparent, for example, in Alfred Marshall who in 1890 wrote about causation of growth in the "New World" "but after all the chief cause of the modern prosperity of the new countries lies in the markets that the old world offers, not for goods delivered on the spot, but for promises to deliver goods at a future date."<sup>6</sup> More recently, the significance of international trade as a source of markets for less-developed countries has been

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<sup>6</sup> Alfred Marshall, Principles of Economics (New York: The Macmillan Company, 1952), 8th edition, p. 669.

emphasized by such writers as A. K. Cairncross and Ragnar Nurkse.<sup>7</sup>

We have also seen that the theme of market provision has received attention in the growth perspective of the institutional school. In both their "balanced growth" and "unbalanced growth" theses, the stimulation of investment by market forces is the nub of the argument.<sup>8</sup>

To emphasize the significance of market provision as a growth-promotion force, we show in Diagram 2b the real (commodity) circulation between sectors (a) and (b) by the solid circuit while the monetary circulation, which accommodates the real circulation, is shown as the dotted edges. It is this latter circulation of monetary payments that constitute the "market" in the pecuniary sense. Diagram 2b, at first glance, suggests the symmetrical aspect of the exchange of payments between the two sectors (a) and (b), implying a mutual provision of market outlets for the two sectors. Associated with exchange of product is the fact that both sectors may view the other as a marketing outlet for its own products, which is the significant aspect of the monetary circulation.

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<sup>7</sup>A. K. Cairncross, Factors in Economic Development (New York: Frederick A. Praeger, 1967) and Ragnar Nurkse, Equilibrium and Growth in the World Economy, eds., Gottfried Haberler and Robert M. Stern (Cambridge: Harvard University Press, 1961).

<sup>8</sup>See Chapter 3, Section 5.

When this bilateral functional unit serves as a mode of operation in the economy, entrepreneurs in both sectors will begin to develop the habit of anticipating the routine or automatic expansion of the market offered by the other sector. This symmetrical aspect of the bilateral circulation, construed here as mutual stimulation of investment decisions, is the heart of the balanced growth thesis referred to earlier.<sup>9</sup> In fact, bilateral exchange may be considered as a "minimum model" required for demonstrating this general equilibrium aspect of the balanced growth thesis.

More significant, however, for growth is a recognition that there may also be an asymmetrical aspect to market provision in bilateral exchange. In bilateral trade between sectors (e.g., industry, agriculture, and foreign) in less-developed countries, one frequently, perhaps even typically, finds that one of the trading sectors has a well developed, highly monetized, market while the other has a more nascent market. The more primitive market sector, through access to the more developed market sector, is able to reap benefits of an assured monetary market - not available within the less-developed market itself. As we show in Diagram 2b, therefore, asymmetry exists in the sense that one sector is

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<sup>9</sup>Chapter 3, Section 5.

the market provider while the other sector is the market user. Thus, we envisage a one-way traffic flow in which this growth-promotion force is transmitted in one direction, from the provider to user. In time, this process may serve to build up the recipient sector adequately so that this sector may eventually offer market provision to other sectors in the economy. Such a process, we believe, is the crux of such growth strategies as the leading sector thesis and Hirschman's unbalanced growth thesis. In both growth is essentially viewed as proceeding in a zig-zag fashion through an intersectoral transmission process.<sup>10</sup>

Analytically, the distinction between market provider and market user is found in the existence of a history of expansion of effective monetary demand in the former but not in the latter. As a consequence, the market provision aspect of bilateral trade between sectors has very different significance for the two sectors. In the case of the market provider, as in Diagram 2b, entrepreneurship is well established and entrepreneurial investment decisions are based mainly on market considerations within the sector itself. In contrast, sector a, the market user, is marked by a deficiency or even absence of entrepreneurial capacity and its very development requires the existence of an external market for encouraging investment.

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<sup>10</sup> See our discussion of this position in Chapter 3, Section 5.

In applying this observation to the three sectors under our present purview, we rank the market-provision facility of each in descending order as foreign, (F); industry, (Y); and agriculture, (X). We may assume the superior rating of the foreign sector is obvious. The colonial heritage, which emphasized the development of the enclave industrial sector, (Y), explains this sector's superiority over agriculture, (X), as a market provider. Thus, the agricultural sector, partly for reasons of its limited monetization, is clearly the most exclusively market-using sector. In the three bilateral exchange circulations listed above, therefore, the foreign sector is the market provider for both domestic sectors (for agriculture as in  $C_2$  and for industry as in  $C_3$ ). As the early stages of industrialization get underway during the transition, the industrial sector becomes a market provider to the agricultural sector in the domestic bilateral exchange circulation,  $C_1$ . In summary, the operational significance of bilateral trade from the market viewpoint is the transmission of monetary demand and the encouragement of entrepreneurship associated with it--from abroad to both domestic sectors and, in the early transition, from the industrial to the agricultural sector.

## Transmission of Technology

One of the most important realities influencing growth of contemporary less-developed countries is the technological gap between advanced and less-developed countries. The very presence of this gap offers a growth opportunity of profound significance, the opportunity to borrow technological knowledge already developed by advanced countries. The role of technology transmission in development has been thoroughly emphasized in existing literature<sup>11</sup> so we need not pause to elaborate on the importance and historical significance of this phenomenon. It should be noted, however, that there is an important technology adaptation aspect to the successful assimilation of technology from abroad--a lesson apparent from Japan's success. Adaptation is essential to upgrade technology in a manner consistent with the less-developed country's resource endowments. In practice, this requires modification of capital-using and labor-saving qualities of imported technology.

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<sup>11</sup>In fact, this is a central theme in Kuznets' view of international development in Modern Economic Growth, expressed in his terms (page 8) as the international "spread of epochal innovation from the societies that pioneer the utilization of its growth potentials to the first series of followers, and then to succeeding ones." See also G. M. Meier and H. F. Haldwin, Economic Development (New York: Wiley, 1957), especially Chapter 17.

The acknowledged presence of the technological horizon offered by advanced countries and awareness that this advantage has been used in the history of development leaves unanswered the important question of how technical knowledge is transmitted. We believe that the answer to this question lies mainly in the demonstration process implicit in bilateral exchange. In principle, technology may be transmitted through a formal education process of engineers and other specialists in the more technologically advanced countries. We are inclined, however, to stress the larger significance of a more informal learning process, based upon the embodiment of technology in traded goods. From the viewpoint of the less-developed country, of course, this refers to the technological component of imported goods. More precisely, the bilateral exchange circulation,  $C_3$ , involves the industrial sector's importation of three types of industrial goods, capital goods,  $M_1$ , finished industrial goods,  $M_2$ , and intermediate goods,  $M_{11}$ . All represent products of modern "Western technology" and, hence, to a greater or lesser extent, are carriers of technology.

Transmission of technology may be a symmetrical relationship in the case of trade between two industrially advanced countries where innovation is a routine matter; e. g., the United States and Great Britain. As we have just seen, however, this facet of bilateral trade between

advanced and less-developed countries is definitely an asymmetrical phenomenon. Both circulations,  $C_2$  and  $C_3$ , involving the foreign sector represent a one-way, inward transmission of improved technology.

This characteristic is shown in Diagram 2c, in which the sector (country) represented as (b) is designated as the more technologically advanced and, hence, the technology exporter. This is emphasized by the heavier edge representing the flow from (b) to (a). The growth significance of such transmission of technology lies in the gradual enhancement of the recipient sector's technological sophistication. Eventually, this leads to a sector's own capabilities to develop new technology, the first stage being the adaptation process, rather than mere transplantation, so striking in Japanese development.

Japan's case points out yet another feature of transmission of technology; transmission is possible (in fact, perhaps more effective) when it is carried by imported goods in a bilateral trade relationship. A unilateral triumph of resources financed by foreign aid or private capital inflows, therefore, is not necessary.<sup>12</sup> This attribute of bilateral trade is clearly recognized in the U. S. policy of prohibition of export of "strategic goods" to certain Communist countries.

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<sup>12</sup> Though, as we suggest later, unilateral transfers may be useful to facilitate the transmission of technology.

The technological transmission process is not restricted to international trade; it also operates among domestic sectors of the economy. In the bilateral domestic circulation,  $C_1$ , an asymmetrical relationship may also occur in which the industrial sector begins to transmit modern technology to the more backward agricultural sectors. This arises from the enclave heritage of the industrial sector during the colonial epoch, giving it a clear headstart over agriculture in the technological revolution. Thus, we find the emergence of a historical pattern, in which technology first enters via the industrial sector and eventually is diffused to agriculture.

#### Resource Complementarity, Markets, and Technology: Summary

We have just examined the growth significance of bilateral exchange from the viewpoint of three growth-promotion forces: resource complementarity, market provision, and technology transmission --summarized in Diagram 2. For each, we find it useful to make an asymmetrical distinction; i. e. , between vent user and vent provider, market user and market provider, and technology importer and technology exporter. These key ingredients of growth all represent important aspects of growth accomplishments during the transition. The society must diversify its resource base; it must extend its domestic

**markets to foster entrepreneurship and investment; and it must acquire a growing capacity for adaptation and application of modern technology. These three ingredients of growth have been discussed in terms of their significance in bilateral exchange. We will, however, generalize the application of this analytical distinction of prime growth forces in the remainder of this study. For convenience of this later analysis, we adopt a symbolic representation for each of the three: R (representing resource complementarity), M (representing market provision), and T (representing technology transmission).**

**The reader may object to our device of separately treating the components of this triad of growth-promotion forces, R - M - T, for analytical purposes. It may be argued that actual trade will likely involve all three; the same bilateral trade phenomenon which assists in diversifying the resource base through providing a vent for surplus also tends to monetize the economy by offering market outlets as well as leading to the reflex of imports transmitting technology. Yet we find that the analytical separation of the three distinct aspects has some empirical validity.**

**Empirical cases in which all three aspects are not present in bilateral exchange can be readily found. In the case of trade between a Communist country which insists on a barter basis and a less-developed**

country, for example, the market provision aspect (M) is absent, though the other two, technology export, T, and resource diversification, R, will likely be found. From this viewpoint, incidentally, less-developed countries have more to receive from bilateral exchange with advanced capitalistic countries. The market experience of capitalistic countries, and the entrepreneurial inducement associated with it, offer the acquisition of this important growth force, one which can only be instilled gradually through the exchange process.

The colonial epoch represented a trade pattern in which, for all practical purposes, R and M were present in bilateral exchange between enclave and foreign sector, while T was absent.<sup>13</sup> The vent phenomenon (R) was a basic feature of colonial trade and the enclave was clearly dependent on the export-oriented market (M). However, transmission of technology to domestic entrepreneurs was meager by virtue of the preempting of entrepreneurial roles by foreign agents. This, we noted in Chapter 2, was the basic cause of long-run stagnation in the domestic economy during the colonial epoch. In fact, a major objective of nationalistic growth after decolonization has typically been correcting this basic defect of colonial-type bilateral exchange.

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<sup>13</sup>See our discussion in Chapter 2, Section 3.

Finally, it is not difficult to cite cases of bilateral exchange in which M and T are present while R is missing. This is characteristic of trade between two industrially advanced countries with diversified resource bases. Here trade offers no vent-for-surplus function while there are likely to be two-way market provision and technology transmission functions. We might also note that this pattern of M and T, but not R, might be appropriate for less-developed countries with highly diversified natural resource bases; for example, Brazil or Indonesia. These countries require entrepreneurial development through trade as well as technology transfer, while the vent-for-surplus phenomenon is less critical. In the long-run the internal availability of a diversified natural resource base makes the resource diversification aspect less crucial than elsewhere.

In asserting the empirical relevance of the distinction among the three growth-promotion forces, R - M - T, we have adopted what amounts to an axiomatic approach.<sup>14</sup> The operational significance of the distinction, however, lies in its application to the transition process

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<sup>14</sup>This emphasizes the independence of each of the triad, R - M - T, by showing, in succession, the validity of R - T, but not M, R - M but not T, and M - T but not R in the three previous paragraphs.

as a time-consuming phenomenon. The development of the two private sectors, industry (Y), and agriculture (X), during the transition may require a varied time pattern (i. e., different sequences) of the three growth-promotion forces, R - M - T. The significant growth promotion force, for example, may change over the twenty-year transition perspective from M to R to T, in that order, rather than M to T to R. Hence, intersectoral relationships of a particular pattern will accordingly be required. Insight into the time pattern of change of the crucial growth promotion force from this triad, R - M - T, constitutes the basic objective in our later empirical analysis.

#### Bilateral Exchange as Learning Experience

The preceding analysis of the R - M - T growth-promotion forces points toward the importance of improving the quality of economic agents. This emphasis emerges very naturally since the effective participation of human agents in the operation of the economy requires the exercise of judgment and decision-making. Participation in any of the bilateral exchange circulations enhances the entrepreneurial decision-making capacity by providing exposure to a learning-by-doing process. The substantive content of this learning process revolves about the R - M - T facets, while the psychological and institutional aspects consist of the

**inculcation of a rational approach to decision-making--the amassing and sorting of facts, the solicitation of expert advice, and the exercise of judgment in arriving at decisions.**

**The seat of entrepreneurial education is in participation in the economy's operation, giving the bilateral exchange a special quality of promoting development through trade, the productivity-raising effects of which have long been recognized. To Adam Smith, production specialization and division of labor led to a more functionally-specific pattern of decision-making, thereby raising productivity. A learning task is also found in the necessity to master imported technology, a process which must proceed rapidly if the modern growth epoch is to be launched through routine and widespread innovational activity throughout the economy. The beginning of this process lies primarily in the technology imported from advanced countries and entrepreneurs' acquisition of new skills and attitudes induced by this transmission through trade. Finally, involvement in wider markets creates learning effects of a planning kind as the entrepreneur is induced to anticipate future markets, to digest relevant information and to make decisions consciously about expanding output and introducing new products. Thus, all three facets of bilateral trade foster a learning process essential to entrepreneurial development.**

**If an educational process is to be effective for promoting growth, it must not only have the relevant substantive content but it must also motivate large numbers of participants to learn in an active way. The very artistic nature of entrepreneurial skills suggests that highly motivated "learning by doing" must be the cornerstone of entrepreneurial development. The method of experimentation, through trial and error procedures, is particularly appropriate.<sup>15</sup> Bilateral exchange offers these active learning-by-doing opportunities because entrepreneurs become participants in a real life process, responsible for their own success or failure. Furthermore, as a part of the entire economy's mode of operation, bilateral exchange offers these built-in learning opportunities to a large number of people. Thus, the evolution of each new form of bilateral exchange not only encourages growth directly through R - M - T, but equally, if not more important, constitutes a learning process to stimulate the development of human agents through widely disseminating new skills and growth-related attitudes.**

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**<sup>15</sup> Even in the formal education of entrepreneurs in modern Western universities this principle is recognized. The famous Harvard Business School case method system is essentially a simulation of reality to foster learning by doing.**

## 2.2 TRIANGULAR EXCHANGE CIRCULATIONS

The discussion in the previous section focussed only upon bilateral exchange as a functional unit in the economy's mode of operation. We now briefly apply the principles developed to the two triangular circulations,  $C_4 = (FXY)$  and  $C_5 = (FYX)$ . Both involve industry (Y), agriculture (X), and the foreign sector (F) (see Chapter 7, Table V, Column 2). We note that both current triangular circulations involve the foreign sector and are, thus, symptomatic of an open economy. Accounting of the commodity flows in these circulations is a simple matter. For example, in  $C_4 = (FXY)$ , the agricultural sector receives payments for exports; the industrial sector purchases imports (with the proceeds from agricultural exports); and a compensatory purchase by agriculture of industrial goods occurs. This triangular circulation, therefore, signifies that the agricultural sector is the foreign exchange earner and that the foreign exchange is used to "finance" import of commodities (intermediate goods,  $M_{II}$ ; capital goods,  $M_I$ ; and finished goods,  $M_Y$ ) by the industrial sector.<sup>16</sup> In the strict sense of finance, the agricultural sector provides no real finance since it is compensated by receiving industrial goods (either intermediate,  $N$ , or consumer,  $Y_L$ ).

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<sup>16</sup>The other triangular circulation denotes the opposite case of the industrial sector exporting to "finance" imports by the agricultural sector.

Our later statistical work demonstrates that this triangular circulation,  $C_4$ , is likely to emerge as an important functional unit in the economy's mode of operation during the transition process. Assuming this to be true, we may speculate that this pattern emerges from the principle of three-way complementarity. An analogy from baseball may help to clarify this principle. Bilateral exchange of players will not be feasible if the players offered by two clubs are unacceptable to the other. Here, triangular exchange may fill the need of three clubs if the offers are made in a complementary way. In this context, pair-wise supply and demand becomes irrelevant since the triangular exchange arises precisely because of the consistency of the "package deal" involving all three parties.

Applied to economic exchange, each sector actually offers a multi-dimensional package (similar to the qualifications embodied in particular ball players) containing the H - M - T triad - resources, market, and technology, the same growth ingredients employed for analysis of bilateral trade. When a package of these ingredients is obviously complementary to three sectors, a triangular exchange circulation will appear.

In applying this abstract principle to the triangular exchange circulation,  $C_4 = (FXY)$ , we offer a hypothesis apropos the significance of this circulation during the transition; namely, that this circulation is likely

to play a major role in the first upsurge of nationalistic effort to reverse the traditional (colonial) external orientation of the nascent industrial sector. To elaborate this hypothesis, we may envisage three natural aspects to the triangular complementarity:

(i) The agricultural sector, given its colonial heritage of exporting raw material-specific goods, continues to rely upon the vent for surplus offered by foreign markets. This sector is not yet ready to supply the domestic industrial sector with intermediate goods.

(ii) The industrial sector, in its first wave of expansion for the internal market ("import substitution") is dependent upon the foreign sector for supplies of both capital and intermediate goods. Thus, its requirements are diversified resources and imported technology for new production.

(iii) The circulation's growth contribution is completed by recognizing that the expanded purchasing power in the agricultural sector offered by the vent for surplus assists in the industrial sector's reorientation toward the domestic market. Thus, the markets provided agriculture, based on exports to the foreign sector, stimulate entrepreneurial decisions to invest in the industrial sector.

Thus, we find that triangular exchange is based upon a viable pattern of complementarity, here viewed from the two domestic sectors.

The same triad of growth ingredients, R - M - T, emphasized for bilateral exchange are clearly apparent, as shown by the expressions underlined above.

The focal point of our analysis in our later theoretical chapters will be formulation of hypotheses of the type just presented. This will be followed by an effort to test our hypotheses against the "facts," represented by our statistical evidence. In both, a central aspect of our investigation will be the relevance of our generation time perspective of the transition, as outlined in Chapter 6. This time orientation is implied, for example, in our suggestion that the triangular functional unit, as a crucial mode of operation, is likely to occur rather early in the generation transition process.

#### 3.4 CONCLUSION

We have argued that in a predominantly private enterprise framework--which is certainly true for the three countries upon which our empirical work concentrates--transition analysis should stress private market transactions as the most basic level. Moreover, those functional units which represent current circulations in the economy's mode of

operation are singled out as important for growth. It is in current circulations that the growth-promotion forces of resources, markets, and technology (labelled R - M - T) are most fully exerted.

Our preoccupation with functional units in the economy's mode of operation serves to re-emphasize the importance of the intersectoral aspect of our approach. Throughout this section we have shown that growth-promotion forces are expressed through an asymmetrical transmission process among the three key macroeconomic sectors of the open, dualistic economy: industry (Y); agriculture (X); and foreign (F). We contend that it would be difficult, if not impossible, to examine the growth-promotion triad R - M - T in a one-sector aggregate model, which suppresses intersectoral relationships, or a highly disaggregated model (e.g., input-output), which is so detailed and symmetrical that the key relationships are adumbrated. The advantage of our intersectoral approach lies in its contribution to making previously vague growth concepts analytically and operationally meaningful. The notions of vent for surplus, resource complementarity, technology transmission, and adaptation--and many others--are naturally intersectoral concepts. Within an appropriate model of the economy's structure (as presented in Chapter 7), these concepts may be recognized as essential attributes of the economy's mode of operation.

## **3. PRIVATE FINANCIAL CIRCULATIONS**

### **3.1 INTRODUCTION**

Private financial circulations are those functional units in the open, dualistic economy's mode of operation which have to do with savings and investment activities and which occur through the private market. Ten circulations of this type ( $Z_1$  through  $Z_{10}$ ) were identified from the aggregate model of Diagram 2 and listed in Table V of the previous chapter. Each of these circulations passes through the financial sector  $\textcircled{Z}$ , implying that each contains at least one of the private flows on capital account: industrial investment,  $I_y$ ; agricultural investment,  $I_x$ ; industrial savings,  $S_h$ ; agricultural savings,  $S_L$ ; and foreign savings,  $A$ . In toto, the financial circulations describe the various sectoral sources from which savings are supplied through the private market to finance investment.

Similar to our approach to private current circulations in the previous section, our major concern is the growth significance of private financial circulations.<sup>17</sup> To consider financial circulations from this viewpoint, they must be interpreted as particular functional units in the

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<sup>17</sup>In the remainder of this section when we speak of financial circulations, we shall be referring to private financial circulations.

**economy's mode of operation, each involving the participation of a large number of economic agents. Thus interpreted, a financial circulation can be analyzed in terms of its significance as a major vehicle of growth at a particular phase in the transition process.**

**The general growth relevance of financial circulations will be readily recognized. Traditional growth theory emphasizes the accumulation of resources as the most essential aspect of growth and development. Broadly interpreted, savings and investment are both necessary and sufficient to explain resource accumulation. In portraying savings and investment flows, therefore, the importance of financial circulations has implicitly been stressed in the traditional approach to growth and requires little elaboration.**

**Having stated that traditional growth theory implicitly recognizes the relevance of financial circulations, however, we should point out that a limited perspective is offered by the overemphasis upon savings and investment. In this emphasis upon the accumulation of physical capital, only a small part of growth-promotion forces is considered. In the previous section, for example, we have shown that current circulations may be rich in growth significance even though accumulation of capital is excluded from consideration. Similarly, the full growth significance of financial circulations extends well beyond the limited purview of the**

traditional approach. We shall assess the strength of the traditional approach in the next section as an introduction to a more complete assessment of the growth significance of financial circulations. There is merit in the savings-investment emphasis, as we note in Section 3.2, but our interest lies in recognizing it for what it is--a partial view. Thus, its weakness becomes apparent in Section 3.3. Having thus evaluated the traditional approach to financial circulations, we proceed in the remainder of this chapter to adopt a broader perspective to assess their growth significance in all its aspects.

While a one-sector model is adequate to investigate the traditional notions of savings and investment, our own approach requires a multisectoral context. The true significance of financial flows, therefore, lies in intersectoral finance and embraces three aspects: (i) the identification of sectoral origins of savings and investment; (ii) the appearance of commodity flows on current account to accommodate financial flows; and (iii) the necessity for financial accommodation to achieve the implied distribution of titles to wealth. These three issues will be discussed in Sections 3.4 and 3.5 as we analyze the meaning of the various types of private financial circulations identified in Chapter 7, Table V, from the macroscopic model of Diagram 2 of that chapter.

The true growth significance of financial circulations is found in their serving as functional units in the economy's mode of operation. Financial circulations are considered from this viewpoint in Section 3.6, with special emphasis upon their appearance during particular phases of the transition. In Section 3.7 we attempt to evolve certain abstract principles to explain the emergence of particular financial circulations. In this chapter, however, the discussion remains at the heuristic level; its purpose is to contribute to the formulation of an evolutionary thesis of transition growth to be elaborated in later chapters.

### 3.2 THE STRENGTH OF THE RESOURCE AUGMENTATION

Interpreting the term "resources" broadly to include both physical and human resources, it may be said that there is a strong tendency in economic literature to equate growth with resource accumulation. This viewpoint was already apparent in the writings of the early Classical economists such as Adam Smith and Ricardo, and we have noted that the growth tradition of both the planning and institutional schools conform to this philosophy.<sup>18</sup> The basic strength in this orientation is its underlying assumption that the key to growth lies

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<sup>18</sup>See Chapter 3, Section 6, and Chapter 4, Section 5.

in production phenomena; the primary significance of resource augmentation is found in its contribution to the expansion of productive capacity. Thus stated in general terms, one cannot seriously challenge the proposition that production is the foundation of growth.

The appeal of this approach, rooted in production phenomena, is enhanced by its amenability to a technical formulation. The central thesis of this approach may be readily stated in precise terms. Letting  $R_1, R_2, R_3, R_4 \dots$  represent the various categories of resources (e.g., capital, labor, entrepreneurship, intermediate goods) and letting  $Y$  represent total output (GNP), we may write an aggregate production:

$$8.1 \quad Y = f(R_1, R_2, R_3, R_4 \dots t)$$

where "t" stands for time.<sup>19</sup>

From this broadly defined production function, we may readily deduce by total differentiation with respect to time.<sup>20</sup>

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<sup>19</sup>We have already encountered this type of production function in our review of the institutional approach. See Chapter 3, Section 3.

<sup>20</sup>
$$dY/dt = (\partial Y/\partial R_1)(dR_1/dt) + (\partial Y/\partial R_2)(dR_2/dt) + (\partial Y/\partial R_3)(dR_3/dt) + \partial Y/\partial t$$

$$(dY/dt)/Y = (\partial Y/\partial R_1)(R_1/Y)(dR_1/dt)/R_1 + (\partial Y/\partial R_2)(R_2/Y)(dR_2/dt)/R_2 \\ + (\partial Y/\partial R_3)(R_3/Y)(dR_3/dt)/R_3 + (\partial Y/\partial t)/Y$$

$$8.2a) \quad \eta_Y = \phi_1 \eta_{R_1} + \phi_2 \eta_{R_2} + \phi_3 \eta_{R_3} + J \quad (\text{contribution equation})$$

$$b) \quad \eta_Y = (dY/dt)/Y, \quad \eta_{R_1} = (dR_1/dt)/R_1,$$

$$\eta_{R_2} = (dR_2/dt)/R_2, \quad \eta_{R_3} = (dR_3/dt)/R_3 \quad (\text{rate of growth})$$

$$c) \quad \phi_1 = (\partial Y / \partial R_1) (R_1 / Y), \quad \phi_2 = (\partial Y / \partial R_2) (R_2 / Y), \quad \phi_3 = (\partial Y / \partial R_3) (R_3 / Y)$$

(partial elasticity)

$$d) \quad J = (\partial Y / \partial t) / Y \quad (\text{innovation intensity})$$

Equation 8.2a, which may be labeled as a "contribution equation," states that the growth rate of GNP ( $\eta_Y$ ) represents the combined "contributions" by the various terms. A typical term such as  $\phi_2 \eta_{R_2}$  is the product of the rate of growth of the resource  $R_2$ ; and  $\phi_2$ , the output of elasticity of  $R_2$ --an aspect of the production relationship. Thus, the contribution to output expansion attributable to a particular resource ( $R_2$ ) is "decomposed" into a quantitative effect ( $\eta_{R_2}$ ) and a productivity effect ( $\phi_2$ ). In addition, there is the term  $J = (\partial Y / \partial t) / Y$ , the innovation intensity which signifies "innovation effects" as a catch-all term summarizing, residually, all other sources of contributing to the rate of growth of GNP. In this way, forces contributing to expansion of output are systematically traced to factor productivity, the rapidity of factor augmentation, as well as to production innovations. The logic and

**simplicity of the framework provided by the contribution equation facilitates the search for causation of growth (output expansion) in an orderly fashion.**

**This technical formulation of the resource augmentation approach is made the more attractive by being amenable to both deductive and inductive analysis. Deductive effort investigates the rules for expansion of resources (i.e.,  $\eta_{R_1}$ ,  $\eta_{R_2}$ ,  $\eta_{R_3}$  ..... ) entailing either an exogenous or endogenous theory. Typically, population (labor) and natural resources (land) are treated as exogenously given, while capital is considered by an endogenous theory. In such an endogenous capital theory, the savings-investment pair constitute the focal point in traditional growth analysis. The theoretical insights derived in this way and conforming to the resource augmentation view are the essential pieces of growth knowledge contributed by economists. We return to these growth theses in the next section.**

**The prestige of this type of deductive theory has been greatly enhanced by inductive--or econometric--support. Such inductive work typically concentrates upon the estimation of the numerical magnitude of**

innovation intensity,  $J$ , and the partial elasticities,  $\phi_1, \phi_2, \phi_3, \dots$ .<sup>21</sup>

It then becomes possible to assign quantitative contributions to the various sources of growth of GNP ( $\eta_y$ ) over a given period of time among, say, labor (e.g., 30 per cent), capital (e.g., 25 per cent), and innovation (40 per cent).<sup>22</sup> Such estimates usually tolerate a wide variety of rigorous and non-rigorous quantitative methods.

The strength and enduring prestige of the resource augmentation tradition, therefore, reflect not only its sound roots in production phenomena but also the extensive body of deductive and inductive analysis it has fostered. The approach has the advantages of (i) breadth of scope; (ii) an orderly framework; (iii) precision and simplicity in its theoretical formulation; and (iv) data relevance, implying amenability to quantitative

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<sup>21</sup>There are two types of approaches in this inductive method. In the first, neo-Classical income distribution theory is involved, and  $\phi_1, \phi_2, \phi_3$  are assumed to be the distributive shares accruing to the various factors of production. Their magnitudes are assumed to be approximately constant and estimated independently. Equation 8.2a can then be used to derive the residual term, innovation intensity,  $J$ . (See Robert Solow, "Technical Change and the Aggregate Production Function," Review of Economics and Statistics, Vol. XXIX, No. 3, August 1957, pp. 312-320.) In the second approach, " $J$ " is treated as a random error term and Equation 8.2a is considered linear so that the coefficients  $\phi_1, \phi_2, \phi_3$  may be estimated by the regression method.

<sup>22</sup>See, for example, Edward F. Denison, The Sources of Economic Growth in the United States and the Alternatives Before Us (New York: Committee for Economic Development, 1962).

**analysis. In this age of quantitative and econometric orientation, it is natural that the traditional approach has flowered and dominated the stage in growth studies. Yet, the time has come for shaking loose from the procrustean grip of this traditional approach if we are to understand better the process of transitional growth.**

### **3.3 WEAKNESSES IN THE RESOURCE AUGMENTATION APPROACH**

**When one pauses to consider the growth-promotion forces emphasized by this simple approach, its narrowness is readily apparent. The essence of growth-promotion forces contained in the resource augmentation approach may be succinctly stated by resort to the Harrod-Domar model.<sup>23</sup> Postulating one aggregate production sector with output (or GNP) capacity of  $Y$ , it is assumed that two types of goods, consumption ( $C$ ) and investment ( $I$ ), can be produced. Investment constitutes additions to capital stock ( $K$ ) (i.e.,  $I = dK/dt$ ) and thus contributes to the expansion of productive capacity (i.e.,  $dK/dt = kdY/dt$ , where " $k$ " is the capital output ratio). Hence, the forces which govern the division of output between  $I$  and  $C$  are the critical, in fact, the only, growth-relevant forces. These forces are found in those related to savings**

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<sup>23</sup> See Chapter 4, Section 4.4.

and frequently summarized in the Keynesian average propensity to save, "s." This latter is construed as the "rule of resource division" between C and I, under which a constant fraction of output (i.e., sY) is available for investment (i.e., I = sY). The system is now complete and the Harrod-Domar growth rate,  $n_Y = s/k$ , can be readily deduced. This growth rate summarizes the basic endogenous growth thrust (or growth promotion force) of the resource augmentation approach.

This basic growth promotion force, the average propensity to save, s, leads to the viewpoint that austerity, through controlling the magnitude of "s," determines rapidity of growth. The virtue of austerity alone conditions the society's growth thrust and, hence, growth is viewed as austerity or savings-pushed. This conclusion is strengthened by addition of the proviso that the capital-output ratio, "k," will, in fact, be constant through time. Though some adjustments need be made for handling labor<sup>24</sup> and innovation effects may have to be classified,<sup>25</sup> the

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<sup>24</sup>The Solow model is more explicitly based upon the production function of the type in Equation (8.1), recognizing factor substitutability. The Harrod-Domar model is a special case in which strict factor complementarity exists between capital and labor.

<sup>25</sup>For example, in terms of their capital-saving (or using) and labor-saving (or using) quality.

**basic growth-promotion force of austerity remains at the heart of the system.<sup>26</sup>**

**The weakness of the resource augmentation approach does not lie in its being "wrong." There is a very real contribution in the recognition that austerity is a strategic growth-promotion force. The deficiency in the approach is, rather, a matter of its exclusive reliance on this particular virtue to the virtual exclusion of all other growth-promotion forces. In an economy in which innovation and improvement in human skills are not relevant, the austerity virtue may be the dominant cause of growth. This is more or less true, for example, in the long agrarian society epoch where innovation was absent or in the epoch of modern economic growth where innovational activity may be taken for granted. This is distinctly not the case, however, with regard to the transition growth process. The upgrading of the economy's mode of operation to permit a transition from the colonial to the modern growth epoch requires the acquisition of many innovation-related "virtues" in addition to austerity. The neglect of these other critical growth promotion**

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**<sup>26</sup>In particular, the austerity-pushed growth rate must be fast enough to overcome the force of the population explosion if the law of diminishing returns is not to work to the disadvantage of labor productivity. This is a key lesson from the resource augmentation approach.**

**virtues renders the resource augmentation approach inappropriate for, if not irrelevant to, the study of transition growth.**

**Further scrutiny of the Harrod-Domar model reveals that it rules out by assumption three types of significant growth problems:**

- (1) It assumes a versatile resource base for production of output,  $Y$ , which can (in the engineering sense) produce either consumption ( $C$ ) or investment ( $I$ ) goods, as dictated by "consumer sovereignty";**
- (2) It assumes the availability of entrepreneurship in a market context to acquire, manage, and control the investment goods, amounting to the postulation of instantaneous entrepreneurial response to savers' preferences, and**
- (3) It assumes that the technological aspect of growth is so simple that it can be compressed, for analytical purposes, into the constant capital-output ratio,  $k$ .**

**In short, the resource augmentation approach assumes away the three critical growth ingredients of a society's resource base, market environment, and technological complexity--the triad  $I - M - T$  identified earlier in this chapter, as the sources of the most potent growth thrusts appearing in the transition process. It is the neglect of these forces which constitutes the weakness of the traditional approach to growth.**

**The  $I - M - T$  triad is particularly germane to transition growth. In an economy which has inherited the built-in stagnation of**

colonialism, mere availability of savings will not automatically lead to increasing productive capacity--a lesson we have been taught from the postwar experience in many less-developed countries. In such societies, to the extent that a causation between savings and productive capacity exists, it is likely to be the reverse--expansion of productive capacity leading to greater saving capacity. In a closed economy lacking the capacity to produce investment goods, attempts to save will be frustrated by lack of investment outlets. More generally, in societies lacking the ability to expand production, savings cannot be put to use.

Given an expansion of output capacity, however, savings are likely to grow. In this situation, per capita consumption need not be reduced, and what is required is a force restraining significant consumption increases. This force may well be found in the distribution of income, favoring property-owning classes which will more or less automatically reinvest profits and other property income. There is a natural presumption that during the transition income distribution will favor the scarce factors of entrepreneurship and capital at the expense of the abundant factor, labor. The plausibility of an almost automatic austerity process is clearly apparent if output capacity, in fact, increases.

This leads to a strong presumption that savings, in the sense of austerity, are unlikely to be necessary or sufficient to launch and

maintain transition growth. In view of the deficiencies in the more positive growth ingredients of the R - M - T triad, savings, in fact, may not be the chief bottleneck factor, a notion well recognized in contemporary growth literature. We may refer back to the planning school's typology,<sup>27</sup> in which savings are not considered the limiting factor during early stages of growth.<sup>28</sup> In this view, savings emerge as a bottleneck only at a later phase of growth when the other missing growth ingredients have been supplied. We share the view that an early non-austerity dominated phase is likely to appear in a time perspective during which other factors, especially the R - M - T triad should properly be emphasized in analysis of the society's growth thrust.

#### **3.4 SAVINGS AND INVESTMENT IN A MULTI-SECTORAL CONTEXT**

In contrast to the artificially restricted role of savings and investment in the one sector context just discussed, our analysis of financial circulations will be conducted in a multi-sectoral context. This

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<sup>27</sup>See Chapter 4, Section 4.4.

<sup>28</sup>Chenery and Strout refer to this phase as the "skill limit phase," where skill limit is defined as "reflecting the skill formation required of managers, skilled labor, and civil servants in order to increase productive investment." (H. B. Chenery and A. M. Strout, "Foreign Assistance and Economic Development," American Economic Review, Vol. LVI, No. 4, Part 1, pp. 679-733.) We find this definition of skill, to reflect the saving-push notion of growth, somewhat narrow for analysis of early transition growth phases.

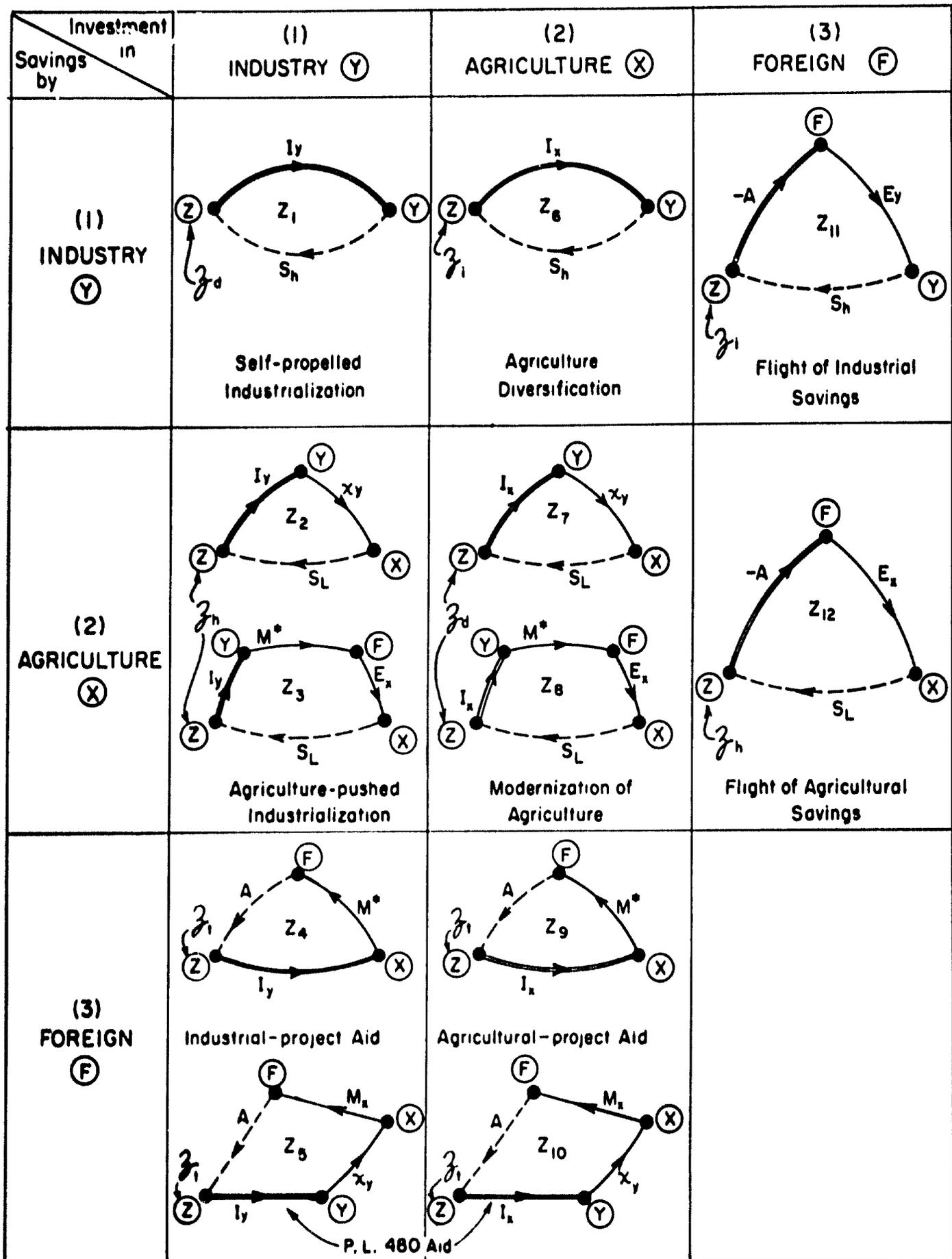
conforms to the general emphasis upon intersectoral relationships in this study. For purposes of our analysis, identification of sectoral sources of savings and the sectoral destinations of investment are essential for posing the basic structural asymmetry in finance and drawing out its significance for transition growth.

In the private market economy there are three macroscopic production sectors, industry (Y), agriculture (X), and foreign (F). Since savings can originate from and investment occur in any one of these three sectors, it is natural to classify private financial circulations by use of a three-by-three table, as we have done in Diagram 3. In this diagram, columns indicate the destinations of investment while rows indicate origins of savings--both presented in the order of sectors (Y), (X), and (F). The ten private financial circulations,  $Z_1$  to  $Z_{10}$ , listed in Chapter 7, Table V, are shown in the first two columns of Diagram 3. In addition, two circuits,  $Z_{11}$  and  $Z_{12}$ , not previously discussed and representing investment in the foreign sector are given in the last column.<sup>29</sup> Each diagonal cell shows circulations representing intrasectoral finance in which a sector's savings finance

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<sup>29</sup>The construction of these circuits and their economic interpretation will be discussed later in this section.

**Diagram 3: Financial Circulations in the Open, Dualistic Economy**



investment within that same sector. The other (non-diagonal) cells contain circulations providing for intersectoral finance in which investment in a given sector is financed by savings transferred from another sector.

A few technical remarks will assist the reader to grasp the meanings of these circulations. First, the financial vertex  $(Z)$  is included in each circulation, which constitutes the mathematical definition of a financial circulation. Second, every circulation contains one savings edge (represented as a dotted edge) and one investment edge initiating from  $(Z)$ , represented as a double edge. The reader may thus verify that in each circuit the double (investment) edge comes after the dotted (saving) edge since the latter always terminates at  $(Z)$ . Finally, when a financial circulation is a circuit with a length (i. e., a number of edges) greater than two, there is at least one more edge (a simple solid edge) which may be called an accommodating edge. Thus, financial circulations involve three types of flows (edges): savings edges, investment edges, and accommodating edges. The complexity of financial circulations is a matter of the number of accommodating edges present.

The economic interpretation of a savings edge is readily apparent: the initial vertex indicates the saving sector. Thus, all the savings edges in the second row initiate from  $(X)$ , representing

agricultural sector savings; and all savings edges in the third row initiate from (F), representing foreign sector savings.

We may approach the significance of investment edges by noting a difference between domestic investment [Columns (1) and (2)] and investment abroad [Column (3)] as follows:

(i) For domestic investment, the investment edge always terminates at (Y).

(ii) For investment abroad, the investment edge always terminates at (F).

Somewhat obscured by these mathematical facts are certain important structural asymmetries, implicitly assumed in our model developed in the previous chapter. There is, first, an obvious asymmetry between domestic and foreign investment. While domestic investment leads to the domestic accumulation of real capital goods, investment abroad leads to accumulation of claims against foreigners. (This may be seen from the different terminal points for the two types of investment.) While both lead to accumulation of assets, domestic investment is universally considered a favorable growth phenomenon, but investment abroad is, at best, viewed with suspicion. This difference, of course, reflects capital scarcity in the typical less-developed country. Hence, investment abroad by domestic savings is termed "capital flight,"

a term connoting opprobrium. In principle, capital flight should not occur during the transition, but we frequently find it occurring in practice. For this reason we treat it as a special category of financial circulation in Section 3.6.

Domestic investment involves a second asymmetry, a productive capacity asymmetry. This reflects the fact that only the industrial sector produces capital goods, as shown by all domestic investment edges terminating at (Y), the industrial sector. Yet, the ultimate destination of these (as well as imported) investment goods may be either the industrial sector itself or the agricultural sector. This difference in destination is shown by distinguishing one investment edge as  $I_y$  (investment in the industrial sector), applicable to all circulations in Column (1), and the other investment edges as  $I_x$  (investment in the agricultural sector), applicable to all circulations in Column (2).

The presence of accommodating edges, in general, signifies greater complexity in intersectoral financial relationships with degree of complexity related to the number of such edges in a circulation. Their emergence attests the simultaneous occurrence of trade accommodations; i. e., current flows to accommodate the financial transaction. This phenomenon is a familiar idea in analysis of international capital movements in international economics. It is

intuitively obvious that the degree of round-aboutness in such accommodation depends upon the breadth of productive capacity in the capital exporting country. If the latter has a diversified productive capacity, enabling it to export all of the commodities required by the capital importing country, no accommodating flow will be needed. If the capital exporter lacks a widely diversified productive capacity, accommodating current flows will develop to satisfy the commodity needs of the capital importer. In view of the limited capacity in less-developed countries, accommodation of intersectoral capital movements, in fact, becomes more important than in international economics.

The classifications in Diagram 3, therefore, are based upon certain morphological characteristics we postulate for the open, dualistic economy. They can, in turn, be defined in terms of "length" and "incidence relations" with the vertex  $(Z)$ . These morphological characteristics reflect implicit assumptions anent the economy's structure--the origin of savings versus the destination of investment, the dichotomy between domestic investment and investment abroad, the asymmetry in productive capacity for capital goods between the two domestic production sectors, and the presence of accommodating current flows to complete a financial functional unit. All serve to stress the importance of asymmetrical, rather than symmetrical, relationships in multisectoral finance.

### 3.5 FINANCIAL ACCOMMODATION

From the accounting viewpoint, there is a basic difference between accumulation of capital resources and augmentation of human resources. This difference lies in the fact that accumulation of capital resources always involves accounting in terms of claims to the capital assets accumulated<sup>30</sup> while no such accounting occurs in the case of enhancement of human resources.<sup>31</sup> In the savings-investment process which leads to capital accumulation, therefore, financial accommodation always occurs. Financial accommodation means the process by which claims to the newly created assets are assigned to specific economic agents. While such financial accommodation is necessary in all societies, it is crucial for private enterprise societies in which claims to the capital assets created are ordinarily assigned to the savers who provided the resources for investment. In less-developed countries of private enterprise orientation, financial accommodation is an important aspect of growth accomplishment during the transition.

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<sup>30</sup>This is the distinction Raymond Goldsmith has in mind in distinguishing between intangible and tangible assets, the former representing "claims, liabilities, and evidences of ownership (equities)." See Raymond Goldsmith, "Financial Structure and Economic Growth in Advanced Countries," in National Bureau of Economic Research, Capital Formation and Economic Growth (Princeton: Princeton University Press, 1955), pp. 118ff.

<sup>31</sup>Except in a slave economy, which need not be considered.

**Financial accommodation embraces a wide variety of arrangements by which claims to the newly created assets are assigned. One fundamental consideration in distinguishing type of arrangements is the extent to which the saver and capital user (investor) are separated. Where finance is internal to the firm, the saver and capital user are the same unit and claims to the asset created are directly assigned. Where, however, the two are separated, many arrangements are possible for handling the assignment of claims; e.g., stocks, bonds, savings certificates, etc. Here the claims accruing to savers may be merely income claims (e.g., bonds) or a combination of income and indirect control claims (stocks). The transition process involves, as we have seen, growing functional specificity, and in "finance" this involves progressive separation between savers and investors, as well as between residual ownership rights and control. Thus, new forms of financial accommodation must be evolved to assign claims among the participants in an ever more complex savings-investment relationship. The development of social arrangements to facilitate these changes is reflected in the institutionalization of financial accommodation.**

**Thus, financial accommodation amounts to a device to dispose of claims--income, ownership, and control--arising from the creation of capital assets. Whatever social arrangement is employed, some**

assignment of these claims is made--whether implicitly or explicitly. Those who save, by virtue of providing resources for investment, have an intrinsic right to claims upon the wealth created. A first important point to note, however, is that these inherent rights of savers may, in fact, be cancelled and transferred elsewhere. Where, for example, the saver transfers these claims to the investor simultaneously with the transfer of resources, no further financial accommodation is required since the claim is "cancelled." This is exemplified by foreign aid financing of domestic investment, where the foreign government renounces claims to the wealth created by its savings transfer. A similar cancellation of claims exists, though it may be less apparent, where domestic savers forfeit claims to wealth created by their savings resources. In the transition process, such transfers of claims frequently occur in a variety of overt or covert ways, such as taxation, through suffering unfavorable terms of trade, or exchange rate disparities.

We are now ready to attack the problem of "classifying" financial accommodation. Though it is difficult to approach this task with rigor, our brief introductory remarks provide some useful clues to the essence of the important distinctions that need be drawn. It is apparent that two basic classes of financial accommodations exist: (a) those in which the saver retains claims, in whatever form, to the wealth

created; and (b) those in which the saver's claims to the created wealth are cancelled and transferred. For convenience in our later analysis of financial circulations we may subdivide each of these general classes of financial accommodation. Thus, we may list four types as follows:

**A. Retention of claims by savers:**

(i)  $Z_d$ : Direct assignment of ownership, income, and control claims to savers: accommodation which involves no separation of saver and investor so that claims automatically accrue to the saver-investor.

(ii)  $Z_i$ : Indirect assignment of ownership, income, and control claims to savers: accommodation through intermediaries between saver and investor, involving separation of the two and institutionalization in assignment of claims.

**B. Cancellation of savers' claims:**

(iii)  $Z_t$ : Direct transfer of ownership, income, and control claims: accommodation involving explicit transfer of all claims from saver to another agent.

(iv)  $Z_h$ : Indirect transfer of claims: accommodation which operates through a mechanism which partially obscures the transfer of claims from saver to another agent.

**The meaning of accommodation types (i) and (ii), involving assignment of claims to savers, is straightforward. In a strictly market economy, all financial accommodation must be one or the other of these types. However, even in a private enterprise economy, not all transactions rely exclusively upon market forces. In less-developed countries undergoing a transition, in fact, it is difficult to draw a sharp distinction between market and non-market forces. Various types of "market imperfections" exist, causing distortions from market equilibrium. In this situation, accommodation types (iii) and (iv) may occur, in which savers' claims to wealth may be voluntarily--or more often involuntarily--transferred to investors or other agents, whether public or private. We shall see that such transfers are crucial financial phenomena in the early phases of the transition process. Among these are the familiar unilateral transfers of claims to wealth which accompany foreign aid grants from donor to recipient country. This example is given to assist the reader in understanding the phenomenon although the variety and significance of the phenomenon extends well beyond foreign aid.**

**We now see that analysis of financial circulations comprises two aspects. In addition to the familiar problem of providing resources for capital formation, there is an important problem relating to the development of institutions offering a variety of types of financial**

accommodation. The latter aspect can be readily incorporated into our framework by taking advantage of the fact that all financial circulations necessarily touch the finance sector vertex  $(Z)$ . The economic function of this sector is financial intermediation to facilitate the savings-investment process. On the basis of this function, qualitative distinctions among financial circulations can be made by attaching notations to the vertex  $(Z)$  for each circulation in Diagram 3. We employ the notation,  $Z_d$ ,  $Z_i$ ,  $Z_t$ , and  $Z_h$ , from the classification just given for this purpose. By this procedure we describe each financial circulation as a particular type of financial accommodation, through which the savers' claims to capital assets are either assigned to him or transferred to other agents. This qualitative characterization of financial circulations is essential for our discussion in the next section.

### 3.6 FINANCIAL CIRCULATIONS AS FUNCTIONAL UNITS

We have mentioned that each financial circulation is a potential functional unit in the economy's mode of operation. Several of these play an important role in particular phases of the transition. Their growth significance becomes clear only when their content as a functional unit contributing to the economy's overall mode of operation is understood. In this section we discuss each financial circulation

shown in Diagram 3 from this viewpoint. We begin with those circulations ( $Z_1$ ,  $Z_2$ , and  $Z_3$ ) which represent domestic financing of investment in the industrial sector (shown in Column 1, Rows 1 and 2, of Diagram 3). Next we will consider domestic finance of investment in the agricultural sector ( $Z_6$ ,  $Z_7$ , and  $Z_8$ ) in Column 2, Rows 1 and 2. We then consider circulations ( $Z_4$ ,  $Z_5$ ,  $Z_9$ , and  $Z_{10}$ ) involving foreign finance (Row 3). We conclude the section by discussing two special circulations ( $Z_{11}$  and  $Z_{12}$ ) reflecting investment in the foreign sector; i. e., capital flight (Column 3).

### Investment in Industry

Of the five financial circulations depicting domestic finance of industrial investment, the simplest is the length-two circuit,  $Z_1$ . This circulation consists of intrasectoral finance since savings ( $S_h$ ) from the industrial sector finance investment ( $I_y$ ) in the same sector. Given its "bilateral" nature, this pattern of finance involves no trade accommodation and, hence, there is no "accommodating edge." This means that the industrial sector itself is capable of producing the capital goods whose creation is financed by the circulation. It may be presumed that the circulation rests heavily upon reinvestment of industrial profits, and the financial accommodation is thus considered to be of the direct type.

Accordingly, the  $(Z)$  vertex for this circulation is labelled as type  $z_d$ , representing direct assignment of claims upon the capital assets created to industrial savers. Nevertheless, we are likely to find some indirect financial accommodation since the industrial sector is the one sector inheriting a financial infrastructure from the colonial epoch. Thus, there may be a measure of institutionalized financial intermediation in this circulation of intrasectoral finance in the industrial sector.

The economic content of this circulation,  $Z_1$ , as a functional unit is emphasized by our labelling it self-propelled industrialization in Diagram 3. This label signifies that the circulation occurs entirely within the industrial sector. The growth significance of this fact is two-fold. First, the sector relies upon its own savings, which are mainly reinvested profits derived from previous gains in output expansion. Second, and even more significant, this functional unit shows the industrial sector's self-reliance in both resources and technology since imported inputs are not required to accomplish the investment in terms of capital goods production. The self-reliant nature of the industrial sector portrayed by this circulation, therefore, suggests that this functional unit is likely to become significant only after some considerable success has been achieved in the transition process. We may note, also, that this circulation is appropriate for application of the Harrod-Domar model,

which (as we noted earlier in this section) requires a considerable degree of self-sufficiency in many aspects of the economy.

The two remaining patterns of domestically financed industrial investment ( $Z_2$  and  $Z_3$ ) are intersectoral, and both require trade accommodation. They represent the transfer of savings ( $S_L$ ) from the agricultural sector to finance investment in the industrial sector ( $I_y$ ). In the length three circuit,  $Z_2$ , the transfer occurs through delivery of agricultural goods,  $x_y$ ; i. e., food ( $X_h$ ) and raw materials (R) to the industrial sector. However, the transfer may also occur in a more roundabout way, as shown in the length four circuit,  $Z_3$ . In this latter case, the agricultural sector exports agricultural goods ( $E_x$ ), and the foreign exchange proceeds are made available to the industrial sector for importation of industrial import goods,  $M^*$ . These may be industrial consumer goods ( $M_y$ ), but in the transition context are more likely to be capital goods ( $M_i$ ) or industrial raw material inputs ( $M_R$ ). Whenever agricultural savings,  $S_L$ , are used to finance investment (whether industrial or agricultural), such trade accommodation on current account must always occur since the agricultural sector cannot produce investment goods. This phenomenon may be seen from Diagram 3, Row 2, showing the five circuits involving finance of investment by agricultural savings.

The type of financial accommodation implicit in these two domestic intersectoral finance patterns is considered to be indirect transfer of claims, as shown by the notation  $z_h$  attached to the (Z) vertex in both  $Z_2$  and  $Z_3$ . Given the compartmentalized nature of the economy inherited from colonialism, there is a dearth of institutionalized financial arrangements to accommodate cross-sectoral finance from agriculture to industry. Direct acquisition of claims by agricultural sector savers is also unlikely to be found for the same reason of traditional insulation of the agricultural sector from the enclave. Thus, particularly in the early stages of transitional growth, under the pressure of nationalism, such savings transfers originate from agriculture and will emerge as unilateral transfers in which no claims accrue to savers in the agricultural sector.

In Diagram 3 both circulations, as functional units in the economy's mode of operation, are labelled as agriculture-pushed industrialization. The essential economic content of such a functional unit is that it enables the accumulation of capital in the industrial sector from an agricultural surplus. In view of the variety of accommodation devices that are available for operating this type of functional unit (as we shall see), it may occur during several phases, in somewhat different forms, during the transition. It is frequently found in the initial phase of the transition to push industrialization by mobilizing the slack in the traditional

agricultural export sector left by decolonization. It may also be found at a later phase when the agricultural sector itself has undergone a substantial degree of modernization.

### Investment in Agriculture

Domestic finance of investment in agriculture ( $I_x$ ) is shown in circulations  $Z_6$ ,  $Z_7$ , and  $Z_8$  (Column 2, Rows 1 and 2, in Diagram 3). Intrasectoral finance of agricultural investment is shown in  $Z_7$  and  $Z_8$ , signifying the use of agricultural savings to purchase capital goods produced by the industrial sector. These purchases may include such capital goods as: (i) tools, implements, and machinery; (ii) raw materials for capital goods (e.g., cement, lumber, and hardware) for construction of storage and other farm buildings; (iii) transportation equipment (e.g., trucks and carts); and (iv) material, equipment, and construction services for building roads and irrigation facilities. Given the atomistic organization of agriculture in the typical less-developed country, we consider such self-finance of agricultural investment to represent the direct type of financial accommodation. The saver himself purchases and obtains claims to the capital goods created. Hence, the  $(Z)$  vertex for these circuits is labelled  $Z_d$ , direct assignment of claims.

In Diagram 3 (Column 2, Row 2) we label these circulations as functional units representing modernization of agriculture. This choice of terminology reflects our position that modernization of the traditional agricultural sector requires access to outside sectors rather than the insulation it suffered during the colonial epoch. This access is implicit in  $Z_7$  and  $Z_8$ , in which agricultural savings finance injections of new investment (capital goods) into the agricultural sector. This is made possible by access of another kind, access to markets provided by other sectors. It is important to note, therefore, that modern capital inputs in agriculture require that that sector reach out to establish contact with the industrial sector, the source of these inputs. Thus, these circulations promote modernization through integration on both the input and output account. Of the two available avenues, circulation  $Z_7$  involves modernization via the strictly domestic route in which the agricultural sector must acquire the capacity to sell goods ( $x_y$ ) in the domestic (industrial sector) market. The second route involves agricultural sector participation in foreign markets, strengthening the economy's modernization effort through increasing availability of modern inputs of foreign origin. The sequencing of these functional units as significant phase components of the economy's mode of operation

during the transition is an important aspect of development strategy.

This issue will be discussed in Chapter 11.

Investment in the agricultural sector may also be financed domestically through an intersectoral process as shown in  $Z_6$ . In this case the savings ( $S_h$ ) originate in the industrial sector. This cross-sectoral movement of savings will almost inevitably require the development of financial institutions to channel savings collected from the industrial sector to the widely dispersed and small-scale agricultural firms. Hence, we view this circulation as requiring indirect assignment of claims to savers,  $z_1$ , and the vertex  $(Z)$  is so labelled. Partly for this reason, this circulation is unlikely to be significant in the early part of the transition. Institutionalized financial accommodation of the kinds required for providing long and intermediate-term agricultural credit were rare in colonial systems, and their development is a slow, laborious process. The very insulation of traditional agriculture was inimical to development of these institutions, from the viewpoint of both savings provider and savings user. Moreover, during the colonial epoch such savings as the industrial sector did not reinvest in that sector were outward-bound as profit transfers abroad. During the early stages of the transition, moreover, it is doubtful that the nascent industrial sector, striving for its first wave of expansion, will be a surplus saving sector.

We have described the intrasectoral finance patterns for financing agricultural investment ( $Z_7$  and  $Z_8$ ) as functional units promoting modernization of agriculture. This phenomenon is viewed primarily as a process of improving productivity in traditional agricultural crops, based upon innovations in production methods. Such innovations are feasible in the traditional small-scale operations and may thus affect large numbers of farm firms capable of mobilizing small savings for direct acquisition of investment goods.

Though indeed important, this approach to agricultural sector development must be distinguished from diversification of agricultural production. Diversification of output is quite a different type of revolution within the agricultural sector which requires intersectoral finance; i. e., circulation  $Z_8$ . This circulation is labelled accordingly in Row 1, Column 2, of Diagram 3. Diversification will involve introduction of new products in the agricultural sector (e. g., fishing, lumber, fruit, industrial raw materials) and is likely to require concomitant use of modern technology, large-scale organizational methods, new market outlets, and liberal capital requirements. It is precisely this task which is likely to appeal to the industrial sector as its savings potential grows. The industrial sector will have acquired experience at introducing this package of innovations and, more importantly, it will perceive the

markets evolving for the new products whether for consumers (whose incomes have been rising), for the growing industrial demand for intermediate goods, or for export. Thus, unlike modernization of small farms at an earlier stage, industrialists will be attracted to financing agricultural diversification. The functional unit represented by  $Z_6$  is the appropriate vehicle for building this industrial initiative in agriculture into the economy's mode of operation.

### Foreign Finance

Foreign assistance has joined the more traditional private capital inflows as a significant component of investment finance in contemporary less-developed countries. In this section we concentrate upon foreign aid and consider all such inflows as designed to transfer explicitly all claims to the newly-created capital assets to domestic agents. It is thus considered a unilateral transfer and the  $Z$  vertices of the four circulations ( $Z_4$ ,  $Z_5$ ,  $Z_9$ , and  $Z_{10}$ ) in Diagram 3 involving foreign finance of domestic investment are, therefore, labelled  $z_t$ . Employing conventional foreign aid terminology, we distinguish two cases of "P.L. 480" assistance (financing by transfer of agricultural goods) shown as  $Z_5$  and  $Z_{10}$  and two cases which are essentially financed by transfer of industrial goods. In the latter we further differentiate industrial

projects so financed,  $Z_4$ , from agricultural projects,  $Z_9$ . The purpose of all foreign assistance may be seen to be sectorally explicit; i. e., to promote capital accumulation in the industrial sector ( $Z_4$  and  $Z_5$ ) or the agricultural sector ( $Z_9$  and  $Z_{10}$ ). The instruments effecting this purpose are injections of either agricultural goods or industrial goods. The industrial goods imports ( $M^*$ ) may be destined either for the industrial sector or the agricultural sector and may often complement the domestic components provided by any of the circulations involving domestic finance, discussed above. Thus, "project aid" emphasizes the conscious use of imports as purveyors of modern technology, beyond the immediate capabilities of less-developed countries.

P.L. 480 assistance yields agricultural imports,  $M_x$ , and may provide agricultural resources (e. g., food, raw materials) for transfer to the industrial sector (flow  $x_y$ ) to enable that sector to produce capital goods destined for either the industrial sector itself,  $I_y$  (as in  $Z_5$ ) or the agricultural sector,  $I_x$  (as in  $Z_{10}$ ). While agricultural commodities may be crucial in freeing factors of production to produce investment goods early in the transition, it is likely that such assistance will continue to be significant as agricultural modernization occurs. Even in the early phases, there is limitation in the lack of a capital good and technology component in such assistance.

## Investment Abroad

In Diagram 3, Column 3, two cases of capital flight (transfer of domestic savings to finance investment in the foreign sector) are shown. In the first case, capital flight ( -A ) is financed by industrial savings ( $S_h$ ) and accommodated by the export of industrial goods ( $E_y$ ). In the second case, agricultural savings ( $S_L$ ) finance capital export and agricultural exports ( $E_x$ ) provide the trade accommodation. Historically, the second type of capital flight has been an important phenomenon in colonial economies. During non-expansionary periods in the foreign market, agricultural savings were typically mobilized for outward transfer, and claims upon assets created abroad were indirectly transferred from domestic savers to foreigners.<sup>32</sup> We will see later that redirection of this savings base for domestic use, especially to launch industrialization, has been a primary objective of decolonization policies.

Capital flight cannot be discounted as a minor danger in Southeast Asia. First, the long colonial tradition in the area has had the habit of capital export even among indigenous entrepreneurs. Second, Southeast Asian countries have a problem of a significant minority

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<sup>32</sup>See Chapter 2, Section 3.

component (particularly Chinese) in domestic entrepreneurship. These non-indigenous groups are particularly prone to engage in capital flight, especially in situations in which their economic security is threatened by discriminatory policies against minority groups.

With the reduction of the foreigner's influence in the economy and the subsequent rise of nationalism after decolonization, capital flight has been attacked. Not only has capital flight been discouraged by such policies as nationalization and confiscation, but frequently outright prohibitions have been erected. To the extent that capital flight has continued, it represents a remnant of the colonial-type economy. Where it occurs, with or without legal sanction, it must be viewed as a symptom of economic distress, from our viewpoint as an indication of a major compromise with the residue of colonialism.<sup>33</sup>

Notice that the two circuits,  $Z_{11}$  and  $Z_{12}$  of Diagram 3, showing capital flight, have not been identified from the macroscopic skeleton of the open, dualistic economy (Diagram 2 of the previous chapter). They are obtained only by reversing the direction of the edge between the finance sector and the foreign sector from (FZ) to (ZF). This, of course, signifies that the capital inflow (A) becomes negative; and in  $Z_{10}$  and  $Z_{11}$  this negative flow is accordingly denoted as  $-A$ . In general, our

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<sup>33</sup>See Chapter 10 for detailed discussion of such a case.

**empirical work reveals that negative magnitudes appear only occasionally and represent temporary irregularities in the transition process--as illustrated by the capital flight phenomenon.**

### **3.7 PRINCIPLES OF FINANCIAL CIRCULATION**

**Financial circulations are rather intricate functional units in the economy's mode of operation. As such an operating unit, any financial circulation involves masses of individual agents engaging in a consistent set of activities which lead to resource augmentation, especially that of a capital-resources nature. We have just seen that a wide variety of potential savings-investment patterns exist in an intersectoral framework appropriate to the open, dualistic economy. We now raise the question of why a particular financial functional unit occurs, posed as an analytical, rather than a historical, problem. We seek to establish principles at a level of abstraction to explain the occurrence of any financial circulation.**

**Four factors, discussed briefly below, are relevant to the emergence of financial circulations; namely, (a) sectoral slack complementarity; (b) transformation of commodity content; (c) assignment of claims to wealth; and (d) R - M - T complementarity. If a financial circulation is to emerge, some form of social consensus is required on all**

four of these aspects of the savings-investment relationship. The particular type of financial circulation that appears depends upon the particular solutions to each of these four "functions" within the process.

### Sectoral Slack Complementarity

The basic meaning of intersectoral finance is the transfer of a surplus from a capital-exporting to a capital-importing sector. Behind the emergence of such a flow one sector must possess "slack" in the sense that expansion of production does not induce adequate consumption demand, while the other sector is resource-tight, in the sense that production expansion induces demand for investment funds beyond the sector's own savings capacity. Thus, intersectoral capital transfers occur when two sectors complement each other in terms of their relative resource slackness. We note that this, in fact, is the factor, and the only factor, emphasized by the notion of "austerity" or "curbing consumption" in the traditional resource augmentation approach. (See Sections 3.1, 3.2 and 3.3.)

As an application of the idea of slack complementarity, we need only refer to the Keynesian view of unemployment, a view supporting the thesis that economically mature countries usually possess relative

**resource slackness. Thus, foreign assistance from advanced to less-developed economies may be considered to be a natural phenomenon (and the reverse--capital flight--as anomalous) according to this principle of slack complementarity.**

### **Transformation of Commodity Content**

**For the occurrence of a financial circulation, the saving sector must not only generate a savings fund by abstinence from consumption but also the goods represented by these savings must be "transformed" so that they become appropriate for use by the investor. This transformation, as we have seen, is the function of trade accommodation in financial circulation--as we have seen from the solid edges in Diagram 3. The necessity for complex circulations to provide such accommodation is inversely related to the production diversification of the sector providing savings.**

**Applying this principle to the three sectors in Diagram 3, (Y), (X), and (F), we see that the foreign sector, (F), plays a prominent role in commodity transformation because of the more diversified production structure in the foreign sector. On the one hand, foreign capital inflows can be readily accommodated by providing imports on current account. On the other hand, the foreign sector can also serve**

**an intermediary financial link to provide transformation for otherwise purely domestic financial circulations (e.g.,  $Z_3$ ,  $Z_4$ ). This function of the foreign sector (F) is especially critical for savings from the agricultural sector in view of its incapacity to produce investment goods. Without access to the foreign sector on a significant scale, therefore, it would be difficult to rely upon the agricultural sector savings to finance capital accumulation in the industrial sector.**

#### **Assignment of Claims to Wealth**

**In Section 3.5 we have seen that assignment of claims to accumulated capital wealth is an essential function of financial circulations. Unless some type of financial accommodation (e.g.,  $z_d$ ,  $z_l$ ,  $z_t$ , or  $z_h$ ) is arranged, intersectoral finance will not occur. An important distinction may now be made in respect to these arrangements. On the one hand, the two types of financial accommodation,  $z_d$  and  $z_l$ , which assign claims to savers, are market phenomena, regardless of the degree of financial intermediation they involve. On the other hand, the two types,  $z_t$  and  $z_h$ , which transfer claims from savers to other agents, involve either explicit exercise of political power or its expression through "covert" market imperfections.<sup>34</sup> Thus, the first category of**

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<sup>34</sup>These phenomena will be discussed in Chapter 9.

**claim settlement requires emergence of specialized financial institutions, while the second depends upon the use of political authority to exercise the necessary public interference in the market.**

Applying these principles to the circulations of Diagram 3, we hypothesize that all circulations involving transfer of claims from savers (i.e., circulations whose Z vertex is labelled  $z_t$  or  $z_h$ ) are likely to occur, for several reasons, in early phases of transition experience. Foreign assistance transfers ( $Z_4$ ,  $Z_5$ ,  $Z_9$ , and  $Z_{10}$ ) will be readily recognized as appropriate to the incipient stages of the transition; and foreign aid is likely to terminate only when the economy has proceeded to the point of financial self-sufficiency. Furthermore, during the early phase of transition, we frequently find a period of politically fostered growth, during which transfers from the agricultural sector are forced through various government devices to spark industrial expansion.<sup>35</sup> As growth proceeds, however, these forced transfer devices become less essential, and financial accommodation relies increasingly upon market mechanisms, operating through appropriate financial institutions--whose development requires time.

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<sup>35</sup>See Chapter 9.

### R - M - T Complementarity

In our discussion of current circulations, we have pointed out that their growth significance lies in the R - M - T triad, involving transmission of resources, markets, and technology among the various sectors of the economy. A financial circulation may be described as a more complicated functional unit in the economy's mode of operation, possessing a wealthier content than current circulations. Financial circulations ordinarily involve trade relations on current account to accommodate financial flows and, for this reason, the growth significance of the R - M - T forces, which we found applicable to current circulations, will also be applicable to financial circulations.

As one illustration, we cite the circulation  $Z_3$ , which may be described as agriculture-pushed industrialization through agriculture exports. Here we see that the foreign sector (F) provides market stimulation to the agricultural sector (X), while imported resources are transferred to the industrial sector (Y), carrying a variety of possible technology. The complementarity of the three sectors (F), (Y), (X) forms a consistent package in terms of R - M - T relationships, just as we observed for current circulations. In any particular phase of the transition process, a specific financial circulation will occur only when

**the sectors involved in the entire functional unit are complementary in**  
**of these crucial R - M - T factors--in addition, fulfilling the other**  
**complementarities mentioned earlier.**

### **3.8 SUMMARY**

**In this chapter we have described all the circuits involving**  
**the private sector--interpreted as functional units in the economy's**  
**mode of operation--which can be identified from the macroscopic skeleton**  
**of the open dualistic economy (discussed in the previous chapter). We**  
**have concentrated first upon the operation of the private economy because,**  
**in our judgment, transition growth in the context of a capitalistic**  
**framework is primarily the product of interacting decisions made by**  
**private economic agents. It is only after mastering the principles of**  
**growth pertaining to the private economy that we can adequately assess**  
**the role of the government. In this chapter we have prepared the way for**  
**analysis of the transition process in the private economy, to which we**  
**turn in the following chapter.**

**We have identified two types of circulations within the private**  
**market economy, current and financial. As such, they represent ways of**  
**economic life which appear and become significant development**  
**phenomena in particular phases of transition. Interpreted in this way,**

even the current circulations have profound growth significance in terms of intersectoral transmissions, of resources, market forces, and technology or, in our designation, the R - M - T triad. We recognize a difference between financial circulations and current circulations; namely, the involvement of the former with accumulation of material capital through the savings investment process. In terms of growth relevance, this difference between the two is not as important as their similarity because transition growth is infinitely more complex than mere augmentation of capital resources.

Nevertheless, private financial circulations are important as functional units with a savings and investment content. This resource augmentation function, however, is much more than an "austerity" issue--the issue implied by the one-sector Harrod-Domar model. The economics of this financial process must be seen in a multi-sectoral context involving the cross-sectoral channeling of savings, as well as the essential trade and financial accommodation aspects. The possibility of variations in these several dimensions of the process gives a wealth of content to savings and investment phenomena occurring during the transition.

The growth relevance of our more inclusive view of the savings-investment process can be presented in terms of several alternative

development modes. Investment in the industrial sector may be identified as "self-propelled industrialization," "aid-financed industrialization," or "agriculture-pushed industrialization." Investment in the agricultural sector may be analyzed in terms of "modernization of agriculture" through internal finance or "diversification of agriculture" through external finance. We have also identified two types of capital flight which signify a country that anomalous transition growth experience is occurring. Diagram 3 presents a summary picture of these circulations and their appropriate descriptions.

From our broader perspective of the purpose of this book, these circulations are merely the elementary building blocks for investigating the transition process in less-developed countries. The analysis of this chapter, therefore, can assume greater significance only in the context of an evolutionary growth thesis. In such a thesis, the unit of study is not an individual circulation, no matter how important it may be. Rather, our focus is upon the transition process as a whole, and this is the "unit" to be explained and investigated. In this larger perspective, changes in the economy's mode of operation--the physiological aspect of our evolution thesis--comes to the fore. It is hoped that we have, by now, sufficiently demonstrated the wealth of content of ideas associated with an intersectoral approach to transition growth. We shall now more formally begin the evolution thesis.

We have elaborated certain abstract principles to assist in understanding the full growth significance of both current and financial circulations in the private economy. Through application of these principles we seek to attack this issue of changes in the economy's physiology. We have in this chapter provided some hints about the relevance of these principles to the likelihood of occurrence of particular circulations and the sequence of their appearance during the transition. We are thus returning to the issue of time, a matter of overriding importance in transition analysis (see Chapter 6). Having demonstrated in this and the two preceding chapters the wealth of analytical content implicit in the intersectoral approach, we are now in a position to return to this important theme of time by commencing our formal treatment of the evolutionary thesis of transition growth.