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## **‘Looking at the Other Side of the Coin’**

The Relationship between Classical Growth  
and Early Development Theories

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### **Abstract**

This paper extends the history of thought narrative on Allyn Young to recognize the close relationship that the classical growth theory has with the early development theory, as Young’s externalities-fuelled, cumulative growth process influenced the theoretical thought of the early development theory pioneers, Paul Rosenstein-Rodan and Ragnar Nurkse. The conditions that prevent the development of underdeveloped regions, indivisibilities and inelasticities of supplies and demands, represent the breakdown of the conditions that Young highlights as necessary for self-sustaining growth to occur. Hence, Young’s cumulative growth process underlies the view of these early development theorists, though their focus is on the malfunctioning and restarting of this process.

Keywords: classical growth theory, development theory, cumulative growth, externalities, Allyn Young, Paul Rosenstein-Rodan, Ragnar Nurkse

JEL classification: B12, B29, B31

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## 1 Introduction

This paper investigates the influence of Allyn Young's theoretical work on the groundbreaking contributions of early development theorists, Paul Rosenstein-Rodan and Ragnar Nurkse. The work of Allyn Young had a significant impact on early development theory as the above-mentioned pioneers of development economics built substantial portions of their theories of the 'big push' and 'vicious circle and balanced growth', respectively, on the dynamic external economies, an integral part of the vision of self-sustaining growth, as described by Young in his 1928 article "Increasing Returns and Economic Progress".

In his work, Young describes his vision of growth in an advanced capitalist economy, which he modestly sets under the shadow of Adam Smith's dictum 'the division of labor is limited by the extent of the market'. While the connection to Smith's work is straightforward, not only stated explicitly by Young but also recognized by historians of economic thought and recently discussed in Lavezzi (2003), discussion on Young's influence on early development theory is lacking in the literature.

The main objective of this paper is to address this shortcoming by extending the history of thought narrative on Young to recognize his influence on the theoretical thought of development economics pioneers. While this theoretical linkage is to some degree acknowledged within development economics contributions,<sup>1</sup> its recognition is absent within the relatively recent history of thought literature discussing Young's thought on growth which to a surprising extent resembles endogenous growth theory despite having emerged more than a half a century before its birth.<sup>2</sup>

After a background discussion on Marshall, Smith, and Young, the theoretical connection through dynamic external economies leading to increasing returns between the works of the early development theorists, Rosenstein-Rodan and Nurkse, and Young is analyzed. The discussion on this previously unexplored linkage illustrates how substantial portions of Young's ideas were incorporated into the economic analysis of developing countries by these economists. Hence it is argued that Young's notion of dynamic external economies<sup>3</sup> had a strong impact on the development economics discourse as it was applied by Rosenstein-Rodan to the context of developing economies in his theory of the 'big push' and also by Nurkse in his theories of 'vicious

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<sup>1</sup> That is, references to Young are occasionally made, but like many others, Thirlwall (2002), a recent development and growth economics contribution, falls short in recognizing Young's influence on development theory pioneers, Rosenstein-Rodan and Nurkse. "Allyn Young's 1928 vision ... got lost until economists such as Gunnar Myrdal ... Albert Hirschman and Nicholas Kaldor ... started to develop non-equilibrium models of the development process" (ibid., 6).

<sup>2</sup> Blich (1983a,b; 1995) has been quite influential in promoting the view that Young has been neglected by the profession. Sandilands (2000) is an exception within the history of economic thought literature in the sense that, though not explicitly considering Rosenstein-Rodan (1943) as a development theory contribution nor discussing Young's influence on the contribution itself, he does recognize that Young influenced Rosenstein-Rodan (1943).

<sup>3</sup> This notion has become known as pecuniary, market-transmitted, externalities or inter-industry interdependencies within the development economics literature.

circle balanced growth'. These theories, in turn, much influenced other core theories of development formulated at that time, such as Myrdal's 'cumulative causation' and Hirschman's 'backward and forward linkages'. Furthermore, Young's (pecuniary) externalities notion had an influence upon the discourse on externalities, a topic that was formalized by Tibor Scitovsky in 1954.

In short, this essay makes an extension to the history of thought literature on Young by highlighting the significance of Young's contribution in development theory context by exposing the link between Young and the early writings on development theory. This paper proceeds as follows. Each author's work is discussed separately, beginning with Allyn Young's vision of growth and its most notable influences, Smith and Marshall, in section two. Young's work is essentially the starting point of the analysis as he was the first to discuss the notion of dynamic external economies adjoined into a full-fledged 'model' of growth.<sup>4</sup> Relevant comparisons to it are made in the subsequent sections along with a descriptive commentary on the theoretical contributions of Rosenstein-Rodan and Nurkse in sections three and four, respectively. Since this paper unveils the theoretical connection between Young and the early development theorists, the discussion centers on the linkage between the theoretical works of these authors. At times, additional sources are referred to in the footnotes, in case the reader wishes to attain a more indepth contextual or theoretical description of an issue. The last section, section five, concludes.

## 2 Allyn Young's vision of growth

Young's vision of growth is a complex, dynamic process generated endogenously, within the economic system.<sup>5</sup> Although he modestly sets his contribution under the

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<sup>4</sup> By making Young's work the starting point, I am aware that not all relevant influences on his work are analyzed. However, those influences, not central to the argument of this paper are deemed secondary. The notion of external economies elaborated by Young is discussed in relation to the notion by Marshall. Furthermore, as Young takes the famous dictum 'the division of the labor is limited by the extent of the market' by Adam Smith as his starting point, the difference of Young's interpretation from that of Smith's is analyzed. For a historical reconstruction of Smithian and Youngian growth theories, see Lavezzi (2003). The emphasis in the present contribution is slightly different, since its starting point is that classical growth theory culminated in Young's 1928 contribution which then bore influence on early development theory. The fact that Smith abandoned the increasing returns assumption after chapter 4 of the *Wealth of Nations* speaks against considering him a cumulative growth theorist akin to Young. Smith does, however, deserve to be mentioned as a significant influence on classical growth theory. The author became aware of Lavezzi (2003) at a very late stage of writing this paper and all instances where Lavezzi (2003) interpretation of Youngian theory is drawn upon are cited in the text. The parts written *ex ante* Lavezzi (2003) were left as they were and hence certain similarities between these contributions are apparent. This can be considered as supporting the interpretations of Youngian growth theory in both of these contributions.

<sup>5</sup> Young quite explicitly describes his vision as endogenous growth, which he considers prevalent. "[T]o conceive of all economic processes in terms of tendencies towards an equilibrium might even maintain that increasing returns, so far as they depend upon the economies of indirect methods of production and the size of the market, are offset and negated by their costs, and that under such simplified conditions ... the realizing of increasing returns would be spread through time in such a way as to secure an equilibrium of costs and advantages. This would amount to saying that no real progress could come through the operation of forces engendered *within* the economic system—a conclusion repugnant to common sense" (Young 1928, 535; original emphasis).

shadow of Adam Smith's famous dictum 'the division of labor is limited by the extent of the market', Young makes an extensive contribution not only in modernizing the notion set out by his predecessor, but also in extending it to a comprehensive description of growth dynamics in a modern capitalist economy. Many historians of thought have considered Young's critique of general equilibrium methods as the main contribution of his 1928 article, which, as argued here, is rather his dynamic vision of growth, incorporating the role of market size and increasing returns fuelled by external economies.

Allyn Young begins his famous 1928 article "Increasing Returns and Economic Progress" by clearly indicating its purpose: to clarify his vision on external economies and economic growth.<sup>6</sup> He explains that the title of the essay, combining the words *increasing returns* and *economic progress*, is an indication that he does not wish to take a technical view by applying Marshallian equilibrium apparatus, a methodology popular among his contemporaries.

Throughout his career,<sup>7</sup> Young was rather critical of the equilibrium analysis as a methodological device<sup>8</sup> as he states in his correspondence with Frank Knight: "I have yet to see that the method of general equilibrium gives us anything at all that *gets us anywhere*" (Blitch 1983b, 363; original emphasis). In commenting upon the methodology in his 1928 essay, he cautions that the construction possibly "stand[s] in the way of a clear view of the more general or elementary aspects of the phenomena of increasing returns, such as... [he] wish[es] to comment upon..." (Young 1928, 527). Though undoubtedly critical of the methods used by his contemporaries, it must be kept in mind that Young's (1928) focus is to clarify his vision of external economies and economic growth.

## 2.1 Drawing upon Marshall

To sharpen the focus of his essay, Young begins with a discussion on Marshall's distinction between internal and external economies. While he cautions the reader about the limitations of the notion, he considers it useful not only in avoiding a common misconception that the presence of increasing returns necessarily leads to a monopoly, but also in simplifying price determination in the presence of increasing returns (Young

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<sup>6</sup> The article was originally a Presidential Address before section F (Economic Science and Statistics) of the British Association for the Advancement of Science, Glasgow, September 10, 1928.

<sup>7</sup> Blitch gives indication of this in his biography on Young and various other contributions involving him. "Young felt that the professional preoccupation with the logical rigor and refinements of static equilibrium theory was at wide variance with what the mounting empirical evidence showed. The data reflected an economy undergoing rapid change and growth in productivity in manufacturing, industrial structure, goods and services, and capital investment. Static equilibrium theory did not allow for the growth and change, so Young's dissatisfaction with such analysis grew with the passage of time" (Blitch 1983b, 363). Young also had a strong empirical emphasis in his approach to economics ever since his graduate thesis at Wisconsin (Blitch 1983a).

<sup>8</sup> The literature on Young implies that this critique is not only directed to the Marshallian partial equilibrium methods, but also to the general equilibrium apparatus as well. Arndt (1955) discusses Young's critique on the partial equilibrium framework and Kaldor (1972) points to that on the general equilibrium one.

1928). The former point can be considered as his main motivation for choosing the topic in the first place.

The historical and professional context of the lecture gives an insight towards understanding the contribution that Allyn Young tried to accomplish. He arrived at the London School of Economic and Political Science in September 1927 to fill a chair during the time of cost controversy stemming from Piero Sraffa's 1926 article (Blitch 1983a). Sraffa argued that whenever increasing returns were present on the market, monopoly theory was necessary to use in the analysis, which Young felt would be misinterpreted that the presence of increasing returns would automatically lead to the creation of a monopoly (Blitch 1983a). Therefore, he wished to clarify his views, and in retrospect, he appears in the literature of the time as a lonely defender of the existence of external economies.<sup>9</sup>

As mentioned, Young is drawing upon Marshall when applying the internal and external economies distinction, and thus, his description is alike that of his forefather. Young defines *internal* economies as those captured generally when market expansion allows a firm to broaden its production scale (Young 1928, 527). *External* economies, in turn, can be visualized through changes in industrial organization at the macroeconomic level (Young 1928, 527). Marshall describes external and internal economies as "economies arising from an increase in the scale of production of any kind of goods ... those dependent on the general development of the industry; and ... those dependent on the resources of the individual houses of business engaged in it, on their organization and the efficiency of their management", respectively (Marshall 1920, 266). Though similar, Young's emphasis on external economies operating at the macroeconomic level is evident, while no such clear stress is evident in Marshall's definition.

One of the fundamental departures between Marshall and Young is the motivation for invoking analytical distinction.<sup>10</sup> Marshall employs internal economies as a way to incorporate specialization of labor and capital in his static constructions. The distinction of external economies, in turn, he uses as a method through which competitive equilibrium and increasing returns can be made compatible.<sup>11</sup> In contrast, Young

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<sup>9</sup> Blitch (1995) documents the ongoing academic debate that Young had with Knight on the topic. He brings forth evidence that Knight's statement "[that] under the conditions necessary to perfect competition, costs must always increase as supply increases" was refuted by Young in cases in which "the increased supply is a response to an increased demand. 'External economies' of certain sorts *will* be realized ... The point is that certain economies are *possible only with large demand*. An increased output means *more plants*, of course, but the important thing is that they are *not* 'similar establishments', but in general, more highly specialized establishments. As you know I differ from your notion of decreasing costs. I hold them to be real, not necessarily tending to monopoly, and one of the most important economic phenomena of modern times. They are *not* a matter of the 'proportioning of factors'. They are, in great part, a matter of the economies of the *division of labor*, which, as Adam Smith observed, is limited by 'the extent of the market'." (Blitch 1995, 169-70; original emphasis). Furthermore, as a response to Knight's criticism on 'pure external economies' and exhibiting them through the use of the long-run supply curve with a negative slope, Young wrote to Knight that "Where I do not follow you, of course, is in respect to increasing returns. The reasons may be that increasing returns do not exhibit themselves adequately when approached from the point of *equilibrium* price-theory" (Blitch 1995, 170; original emphasis).

<sup>10</sup> The first two motivations of Marshall are also discussed in Blitch (1983b).

<sup>11</sup> Marshall forecasts the relevance of the notions: "These results will be of great importance when we come to discuss the causes which govern the supply price of a commodity. We shall have to analyse

evokes the notion as an introduction for his dynamic vision of economic progress, while Marshall explicitly abstains from connecting his discussion on internal and external economies to economic progress. “The causes which determine the economic progress of nations belong to the study of international trade and therefore lie outside our present view” (Marshall 1920, 270).<sup>12</sup> Young employs the distinction as an analytical tool to isolate internal and external economies tendencies in order to simplify the complex endogenous growth phenomenon and to render it manageable for discussion. Hence, he modernizes Marshall’s concept by applying it to a dynamic vision of growth. Therefore, although first Marshall and later Young use the distinction between internal and external economies as an analytical tool, they clearly do so with distinct motivations.

A more subtle, yet relevant, departure between Marshall and Young can be deduced from their discussion on the factors that contribute to increasing returns. While, like Young, Marshall points out that the division of labor decomposes complex production processes into routine operations, which eventually are taken over by machinery, he also devotes much discussion on how the business management aspects contribute to industrial growth. Marshall states his emphasis clearly when he comments in Chapter 9 upon the following chapters, the first two of which are focused on external economies. “The main drift of the next three chapters is to inquire what are the causes which make different forms of business management the fittest to profit by their environment, and the most likely to prevail over others” (Marshall 1920, 265).

In contrast, Young warns against overemphasizing the management aspects in capturing increasing returns. “Economies of large-scale operations and of ‘mass-production’ are often referred to as though they could be had for the taking, by means of a ‘rational’ reorganisation of industry ... Real leadership is no more common in industrial than in other pursuits. New catch-words or slogans like mass-production and rationalisation may operate as stimuli ... There is a danger, however, that we shall expect too much from these ‘rational’ industrial reforms. Pressed beyond a certain point they become the reverse of rational” (Young 1928, 531; author’s quotes in single quotes). Hence Young clearly distinguishes his discussion from that of Marshall who places much emphasis on the management aspects.

Furthermore, while the recognition of the process that ‘the division of labor decomposes complex production processes into routine operations, which eventually are taken over by machinery’, is present in Marshall, the interpretation of this process and its outcome are quite distinct. Marshall recognizes the close connection between the deepening division of labor and the increased application of capital, though with the latter he chooses to stress the improvement in machinery:

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carefully the normal cost of producing a commodity, relatively to a given aggregate volume of production; and for this purpose we shall have to study *the expenses of a representative producer* for that aggregate volume” (Marshall 1920, 317; original emphasis).

<sup>12</sup> Currie (1981) also mentions this crucial difference between Marshall and Young, pointing how the former lacked perspective on dynamic aspects of growth and that his perception of economic progress was linked to international trade. Though, there does not seem to be an agreement with this in the literature (see Arndt 1955).

[A]ny manufacturing operation that can be reduced to uniformity, so that exactly the same thing has to be done over and over again in the same way, is sure to be taken over sooner or later by machinery...

Thus the two movements of the *improvement* of machinery and the growing subdivision of labour have gone together and are in some measure connected ... But the connection is not so close as is generally supposed. It is the largeness of markets, the increased demand for great numbers of things of the same kind, and in some cases of things made with great accuracy, that leads to subdivision of labour; the chief effect of the improvement of machinery is to cheapen and make more accurate the work which would anyhow been subdivided (Marshall 1920, 255; emphasis added).

While Young emphasizes that the *application* of machinery into the production process is facilitated by the division of labor, Marshall seems to take the application of machinery as given. Furthermore, he points out that “machinery constantly supplants and renders unnecessary that purely manual skill, the attainment of which was, even up to Adam Smith’s time, the chief advantage of division of labour” (Marshall 1920, 256).<sup>13</sup> While he indicates that this process “diminishes some of the advantages of division of labour”, he does recognize that it promotes it further by augmenting the production scale of manufactures which broadens the scope for the division of labor (Marshall 1920, 256). As will be pointed out in the next section, according to Young, the chief advantage of the division of labor is that it facilitates the application of capital, which, in turn, extends the market and the division of labor further. In recognizing and explicitly emphasizing the circularity of this process, he modernizes both Marshall’s and Smith’s notions.

Young completes his discussion of Marshall’s notion by pointing to its notable caveat, brought forward possibly by Young’s realistically driven method of analysis or as has been pointed out by Blitch (1995) as an influence of one of Young’s early teachers, Richard T. Ely’s “look and see” method of practicing economics.<sup>14</sup> The weakness is that the mere focus on internal economies concept gives an exaggerated feeling of stability for industrial progress as it limits itself to gradual firm level changes. Outside this firm focused view, external economies operate and qualitative and quantitative changes take place. The more realistic view of the economic progress as visioned by

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<sup>13</sup> Skill accumulation, improvement in the dexterity of the worker in Smith’s vocabulary, is one of the three consequences of the division of labor that Smith discusses.

<sup>14</sup> Evidence of Young’s realistic approach (or Ely’s influence) can be seen throughout the essay. Young repeatedly points to the limitations of the theoretical concepts whenever significant departures from empirical reality can be found. This method, in Young’s words, is as follows: “We begin, let us say, with a hypothesis—a generalisation. We then look into the facts, knowing that if the hypothesis is sound the facts we find within a certain range will not be inconsistent with it, and we determine our field of inquiry accordingly. This much is deduction. If the facts prove to be consistent with the hypothesis, our tentative deduction is transformed into an induction (or as we say when we are testing some theorem, into a ‘verification’). If the facts are inconsistent with the hypothesis we case about for a new hypothesis, for a generalisation that brings the facts into some sort of orderly relation. In any really creative research, however modest in scale, there is this process of continuous give and take between the search for general relations and the scrutiny of particular details, between thinking and concrete observation” (Blitch 1995, 9).



Young is dynamic, symptomatic of disequilibrating forces, “movements away from equilibrium, departures from previous trends, are characteristic of it” (Young 1928, 528). Not only do firms’ existing products improve over time, but also new products appear on the market while old ones disappear.<sup>15</sup> This reality is not captured by a vision that entails a view of one firm expanding its output, and therefore, Young argues for the necessity of taking a more comprehensive point of view for the analysis. “Not much is to be gained by probing ... to see how increasing returns show themselves in costs of individual firms and in the prices at which they offer their products” (Young 1928, 528).

Young then abstracts away from a firm level technical view to a “more simple and inclusive” macroeconomic perspective in his discussion. He stresses the importance of taking this perspective in analyzing increasing returns and economic growth, as he believes that “these economies lie under our eyes, but we may miss them ... if we try to make of *large-scale* production ... any more than an incident in the general process by which increasing returns are secured and if accordingly we look too much at the individual firm or even, ... at the individual industry” (Young 1928, 531; original emphasis). Thus, it is clear that Young’s emphasis is on increasing returns in the aggregate and on external economies that precipitate them.<sup>16</sup>

## 2.2 Borrowing a theme from the master

Young’s modest character is clearly reflected by his contribution as he sets it under the shadow of Adam Smith’s famous dictum ‘the division of labor is limited by the extent of the market’. Although he claims that he “borrows a theme from one of the masters” and presents mere “variations” on it, Young carries the notion further not only by modernizing Smith’s notion, but also by incorporating it into a comprehensive description of the growth process in a modern capitalist economy.

Young revives Smith’s discussion on the role of the division of labor, which the latter viewed mainly as “splitting up of occupations and development of specialised crafts” (Young 1928, 529). Smith (1952) perceives that the division of labor in this traditional form leads to labor productivity gains due to worker’s dexterity improvement, time saving, and innovation, hence fueling economic growth.

In turn, Young considers the division of labor as a much broader phenomenon and his vision of growth propelled by it entails a significantly more complex mechanism. While recognizing the presence of a wide variety of factors through which the division of labor affects the contemporary economic system, Young chooses to focus his discussion on two aspects: the incorporation of indirect (roundabout) production methods (capital) and the industrial division of labor. His discussion on the former concept is a detailed account of the phenomenon on a firm and sectoral level, while the latter views the phenomenon from an aggregate, macroeconomic perspective. It is important to note that, though Young gives rather detailed accounts at firm and industrial levels to illustrate the underlying phenomena driving the growth process, his overall emphasis remains on economic growth at the macroeconomic level and the purpose of the

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<sup>15</sup> Young’s view bears some similarity to the Schumpeterian notion of creative destruction.

<sup>16</sup> This interpretation finds additional support from the debates Young had with his colleagues. See, for example, the excerpts from the debate between Young and Knight in footnote 9.

microeconomic level descriptions are illustrative of the classical method of analysis followed by Young, in which economic phenomena is viewed and described from micro and macro perspectives consecutively.<sup>17,18</sup>

### 2.2.1 *First variation on the theme: incorporation of roundabout, capital-intensive, production methods*

From the beginning, Young clearly distinguishes his vision from Smith by pointing to a major deficiency in Smith's analysis. While Smith recognizes that the use of capital in production unquestionably facilitates labor, he chooses to emphasize the role of labor division in *the innovation of machinery*. "[E]verybody must be sensible how much labour is facilitated and abridged by the application of proper machinery. It is unnecessary to give any example. I shall only observe, therefore, that the invention of all those machines by which labour is so much facilitated and abridged seems to have been originally owing to the division of labour" (Smith 1952, 5). Young criticizes Smith for having considered the innovation of machinery as the most important contribution of the division of labor with respect to capital in contrast to how it facilitates *the application of capital* in the production process as emphasized by Young. "It is generally agreed that Adam Smith, when he suggested that the division of labour leads to inventions because workmen engaged in specialised routine operations come to see better ways of accomplishing the same results, missed the main point. The important thing, of course, is that with the division of labour a group of complex processes is transformed into a succession of simpler processes, some of which, at least, lend themselves to the use of machinery" (Young 1928, 530).

Young argues that Smith overlooks the crucial role the division of labor plays in *facilitating the application of capital*. As complex production processes are simplified, incorporation of capital (or machinery) to implement the simplified production phases is facilitated. That is, it is easier to introduce machinery to execute simple repetitive, routine-like tasks than complex ones. The essence of Young's first 'variation on the theme' can then be summarized as the most important consequence of the division of labor. While simplifying the production processes, the division of labor fuelled by an expansion of the market enables capital to be incorporated into the production phases, increasing output and productivity, which in turn extends the market and, thus, leads to a further division of labor reinforcing this circular phenomenon and stimulating economic progress.

Young emphasizes that the above-described mechanism gives rise to the most fundamental economies leading to increasing returns at the aggregate level, and he wishes to enunciate this as he feels that they seem to be overlooked at times:<sup>19</sup>

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<sup>17</sup> This interpretation is supported by the biographical accounts on Young by Blitch. "Young, like Adam Smith, was interested, first of all, in the general problems of the economy as a whole, with only essential references to individual industries and firms as operational elements" (Blitch 1983a, 18).

<sup>18</sup> The Marginalist Revolution changed the focus of economic analysis to microeconomics until the revival of macroeconomics following the Great Depression and the emergence of Keynesianism. (For more on this, see Blaug 1997.)

<sup>19</sup> In parentheses, he makes a reference to the view point held by Knight and Sraffa in the cost controversy "Otherwise, economists of standing could not have suggested that increasing returns may

[T]he principal economies which manifest themselves in increasing returns are the economies of capitalistic or roundabout methods of production. These economies, again, are largely identical with the economies of the division of labour in its most important modern forms. In fact, these economies lie under our eyes, but we may miss them if we try to make of *large-scale* production (in the sense of production by large firms or large industries), as contrasted with *large* production, any more than an incident in the general process by which increasing returns are secured and if accordingly we look too much at the individual firm or even, as I shall suggest presently, at the individual industry (Young 1928, 531; original emphasis).

Furthermore, Young adds that these economies “even more than the economies of other forms of the division of labour, depend upon the extent of the market” (Young 1928, 531). In other words, the most important economies that beget increasing returns are generated through the application of capitalistic production methods and are external in nature. Given that they exhibit higher implementation costs, they more strongly depend on the market size to render them feasible than any other types of economies derived from the division of labor.

To highlight how the application of machinery can broaden the *scope* for the division of labor,<sup>20</sup> Young describes two distinct processes through which labor division generates economies.<sup>21</sup> *Primary economies* are created when the division of labor facilitates the application of capital in the production process of consumption goods. In turn, the incorporation of capital (or roundabout production methods) uses labor indirectly<sup>22</sup> and thus, it initiates a second chain-mechanism, creating *secondary economies*, economies seized in the production of capital goods. Both economies function through the same mechanism, namely they are realized as the division of labor leads to application of roundabout or capitalistic methods of production, a process limited, or alternatively, made feasible by the extent of the market. The secondary economies Young defines as determining “[h]ow far it pays to go in equipping factories with special appliances for making hammers or for constructing specialised machinery” (Young 1928, 530). Although not explicitly defined by Young, primary economies can then be associated as those that relate to the production of consumption goods, whereas secondary ones address the production chain of capital goods.

The relative importance of secondary economies is considered by Young as depending on the capital goods’ elasticity of demand. Although, in some cases, they literally can be

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be altogether illusory, or have maintained that where they are present they must lead to monopoly” (Young 1928, 531).

<sup>20</sup> The fact that the usage of machinery broadens the scope for the labor division was also recognized by Marshall, however, he fails to explain the process through which it occurs. In contrast, Young makes the phenomenon explicit.

<sup>21</sup> While Young begins the discussion and places more emphasis on the former concept, only the latter, *secondary*, process is explicitly named and defined by him. His contribution seems to lack consistency in this respect. To clarify the discussion on Young’s process of growth, I dub the former concept as *primary* mechanism, which seems to be the most logical extension for Young’s notion.

<sup>22</sup> As it is required in the construction of machinery and other capital goods.

of secondary importance, Young points out a case when the demand for capital goods is more elastic, highlighting their significance: “[i]n ... instances the demand for productive appliances is more elastic, and beyond a certain level of costs demand may fail completely. In such circumstances, secondary economies may become highly important” (Young 1928, 530). In other words, the importance of secondary economies is apparent in a case when the cost of producing capital goods is below a threshold level, at which the demand for them becomes sufficiently elastic to generate economies leading to an increase in their production, which again increases the scope for the division of labor and fuels this mechanism that generates externalities throughout the economy.

Young is explicit in his definition of market, which he considers to be determined by the purchasing power rather than area or population. He further elaborates that recognizing this leads to the observation that “capacity to buy depends upon capacity to produce. In an inclusive view, considering the market not as an outlet for the products of a particular industry, and therefore external to that industry, but as the outlet for goods in general, the size of the market is determined and defined by the volume of production” (Young 1928, 533). Though his wording emphasizes the demand, the market side, it is clear that Young’s vision is within the framework of Say’s Law—in the vocabulary of Young, the volume of production determines and defines the size of the market.<sup>23</sup> The volume of production, in turn, is influenced by the scope of division of labor and hence by the size of the market.

Defining market following Say’s Law, allows Young to carry Smith’s dictum further.<sup>24</sup> Therefore, he states “the division of labor depends in large part upon the division of labor” (Young 1928, 533). He interprets this that “the counter forces which make for economic equilibrium are more pervasive and more deeply rooted in the constitution of the economic system than we commonly realise” (Young 1928, 533). This circularity of disequilibrating forces within the economic system gives the occasion for economic growth and progress in Young’s vision. An extension of market initiates the mechanism by deepening the division of labor and thus facilitating the application of capital, which in turn further extends the market through an increase of output. Hence there is clearly feedback between supply and demand or, alternatively, they are both endogenous to the process as pointed out by Lavezzi (2003).

Though he views the process as uneven, disequilibrating, Young’s vision encompasses continuity and progress, in that he does not highlight the aspects that might lead to a general failure of the type experienced during the Great Depression.<sup>25</sup> He does, however, make explicit that defining the market in this way as “—an aggregate of productive activities, tied together by trade—carries with it the notion that there must be

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<sup>23</sup> It is generally agreed within the literature that the term Say’s Law, also known as the Law of Markets, is a set of propositions and not simply one law as the name suggests. For a discussion on Say’s Law and the debates it has fuelled, see Baumol (1999).

<sup>24</sup> Lavezzi (2003, 21) argues that Young’s definition is deeper than that of Say’s Law, since “both demand and supply are endogenously determined according to the degree of division of labor prevailing”.

<sup>25</sup> It is worth remembering that Young was writing at the eve of the Great Depression and hence his vision was formed based on the growth and development experience of the advanced economies during the past century.

some sort of *balance*, that different productive activities must be proportioned one to another” (Young 1928, 533; emphasis added). Hence, in this way, he does recognize the necessity of balance and the possibility of imbalances within the market. It will be argued later on that these market imbalances are precisely the ones that preoccupied the early development economists as they sought to explain the absence of self-fulfilling growth in less developed areas.

Furthermore, clear market-based interdependencies (or pecuniary external economies) between industries are present in Young’s vision as any new development in an industry or an increase in the market for goods in one industry has the potential to spill over to other industries and to initiate similar mechanisms, which in turn provoke the phenomenon further.<sup>26</sup> “Every important advance in the organization of production ... alters the conditions of industrial activity and initiates responses elsewhere in the industrial structure which in turn have a further unsettling effect. Thus change becomes progressive and propagates itself in a cumulative way” (Young 1928, 533). The change Young perceives is continuous, endogenous, and clearly of an uneven nature.

Interestingly, Young recognizes the relatively strict conditions underlying his endogenous growth process, indicating that they are not necessarily met in reality: “Moving away from ... abstract considerations, so as to get closer to the complications of the real situation, account has to be taken ... of various ... obstacles. The demand for some products is inelastic, or with an increasing supply, soon becomes so ... Then there are natural scarcities, limitations or inelasticities of supply ... [in addition to which] progress is not and cannot be continuous. The next important step forward is often initially costly, and cannot be taken until a certain quantum of prospective advantages has accumulated” (Young 1928, 535). Hence Young does recognize that there can be significant impediments to the growth mechanism, such as fixed costs and inelasticities of supplies and demands, that he describes and that the conditions required for the process are most likely going to be fulfilled only at later stages of development. In other words, he points to the possibility that these “certain quantum of prospective advantages” are more likely to be met at more advanced development stages than at earlier ones.

Young continues by highlighting factors that fortify the circular phenomenon as well as those that act as a hindrance to it. He points out that the process does not proceed at an even rate, rather it varies across industries and depends upon factors such as industrial organization and its capacity to adjust as well as pure luck as various forces coincide, since the process is partly dependent upon “trial and error” (Young 1928, 534). Further hindrances to the process are created by the inflexible nature of human capital and the time needed to accumulate capital. These impediments, however, are merely mentioned by Young.

While Young’s discussion so far mostly concentrates on describing the dynamics of growth in an advanced market economy, he points out the necessary conditions, upon which the process hinges—sufficiently elastic demand and supply for each commodity and the absence of major indivisibilities—as well as recognizes that certain assumption of the level of development underlies the process. After the following discussion on the second variation on the theme, it will be shown that it is precisely the failures of these

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<sup>26</sup> Young discusses the notion in such broad terms that it seems to entail both *horizontal* and *vertical* pecuniary external economies.

conditions in less developed economies, upon which the early development theorists such as Rosenstein-Rodan and Nurkse focused, as they sought to explain the absence of economic growth in the developing world.

### *2.2.2 Second variation on the theme: industrial division of labor*

Young's second variation on Smith's theme firmly connects his vision of growth to macroeconomic level. He begins describing it by placing the emphasis on the significance of "industrial differentiation" as opposed to that of "industrial integration" as the former concept is more closely connected with the growth of production. Akin to the firm level vision, a similar phenomenon to that of 'the division of labor' takes place, this time, at the industrial level as the production in an industry adjusts to changing conditions (expansion of market, new advances, as well as innovations) and production units adapt themselves while seeking to capture external economies.

Young observes that "over a large part of the field of industry an increasingly intricate nexus of specialised undertakings has inserted itself between the producer of raw materials and the consumer of the final product ... In so far as it is an adjustment to a new situation created by the growth of the market for the final products of industry the division of labour among industries is a vehicle of increasing returns" (Young 1928, 538). As long as the industrial differentiation is a consequence of an expansion of the market for its output, it acts as an instrument for capturing increasing returns at the aggregate level. While recognizing, yet again de-emphasizing, the business management gains, Young points to the various advantages of industrial differentiation. His discussion focuses on the benefits of better geographical location or combination of locations, and above all, on the advantages of deeper incorporation of capitalistic (or roundabout) production methods into the production process. The latter factor highlights the critical importance of external economies, while the process itself imposes a limit to capturing internal ones. Limits to the economical size of firms leads to the division of production phases into different production units, output of each of which is modest in relation to aggregate volume of total industry. It is clear that a competitive economy underlies Young's view. The notion of competition that he envisions is of the classical type,<sup>27</sup> operating in different contexts: within a given degree of division of labor and expanding the degree of division of labor (Lavezzi 2003). The sustained growth of the industry through a large expanding market for its final output enables a deep infiltration of capital in the production processes of even relatively small-scale production units, thus diffusing benefits across the industry (and the economy).

## **2.3 Assessing the impact**

Young clearly elaborates his vision of growth in a modern market economy, which not only methodologically but also conceptually stands radically apart<sup>28</sup> from the research

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<sup>27</sup> See Lavezzi (2003) for a discussion of the different notions of competition present in the Smithian framework.

<sup>28</sup> For terminological clarity: methodologically in the sense that he is not using the Marshallian equilibrium methods and conceptually in the sense that he brings external economies, existence of which was disputed at the time, to the forefront in his analysis as the engine of the growth process.

foci of his colleagues. When describing the mechanism, he mentions aspects that strengthen it as well as some obstacles and impediments to its proper functioning. An intriguing puzzle emerges from the literature when reading through the history of thought contributions on Young. Young's work is considered forgotten or neglected by the profession. While Young has been recognized by several authors as having been ahead of his time in his criticism of general equilibrium methodology and in describing notions such as endogenous growth and externalities, several explanations for the seeming neglect of his contribution by the profession have been given by historians of thought.

To explain the minuscule impact Young's contribution had on the economic literature of the time and thereafter, Blich brings forth many timing-related factors that affected the profession such as "the onset of the worldwide depression ... the monopolistic competition and Keynesian 'revolutions'; the outbreak of World War II and subsequent postwar problems (1983b, 360, author's quotes in single quotes). Kaldor (1972), in turn, argues that the neglect was due to Young's modest exposition and to his before-time critique of methodology that was only properly understood later.

Currie (1981) also explains the neglect due to the unfortunate timing as well as to some stylistic factors of the article. On the stylistic realm, Currie argues that "[t]o a hasty reader it may have appeared, as Young himself characterized it, merely as an appreciative variation on a theme by ... Adam Smith" (1981, 52). This argument, however, does not seem as a plausible explanation of neglect, especially given how Young modernized Smith as discussed before. The stylistic argument could not hold in relation to Marshall either, who though he discusses some similar issues and mechanisms as Young does so by reverting to a static perspective—applying *ceteris paribus* analysis—in contrast to the dynamic process description chosen by Young.

While it is clear that Young's endogenous growth vision did not receive the attention it merits<sup>29</sup> from the profession as a whole, it was not neglected by the profession altogether either. In light of early development theory contributions, Young is not a case of 'professional neglect', as he cast a strong influence on the work of development economics pioneers through his notion of dynamic, market-based, external economies leading to increasing returns that has persisted over a long time within the core notions of development theory and that has recently resurfaced within growth economics contributions. In this way, it can be argued that Young's vision of growth influenced early formulation of development theory, a new field of economic inquiry that much like Young's criticism emerged making alternative assumptions to explain and examine the problems of development, most notably, the absence of growth in developing economies.

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<sup>29</sup> Both Sandilands (2000) and Lavezzi (2003) make a compelling case that important aspects of classical growth theory (or Smithian and Youngian growth theory) are still not adequately addressed by the contemporary growth theory and hence these theories can still be found insightful today. Akin to these contributions, the present contribution will argue that important aspects of classical growth theory that culminated in Young were lost when incorporated into early development theory and hence Young's contribution can still be considered insightful from development theory perspective as well.

The following two sections highlight two core theories of early development economics,<sup>30</sup> which owe much to Young's notion of dynamic external economies. The seminal contribution that ignited this 'new' literature within economics, Rosenstein-Rodan (1943), is discussed first, though given that the theoretical notions it applies to the context of developing economies were much in their infancy at the time and were clarified by later contributions, more comprehensive picture of the theory of big push and externalities that necessitate it are drawn from the author's 1961 and 1984 contributions. Nurkse (1953), in turn, provides a much clearer vision of economic stagnation and potential cumulative growth in his original contribution, and hence this contribution is taken as the point of reference to compare and contrast to the theoretical notions set forth in Young's vision of growth.

### 3 Paul Rosenstein-Rodan: dynamic externalities and absence of growth

In "Problems of Industrialisation of Eastern and South-Eastern Europe", Paul Rosenstein-Rodan begins describing what later became known as the theory of the big push, a large-scale development venture geared towards jump-starting the growth process of a stagnant underdeveloped market economy.<sup>31</sup> According to Rosenstein-Rodan, large coordinated development effort is made necessary by the inherent presence of complementarities and externalities between industries that are more prevalent in developing than developed market economies.<sup>32</sup>

Stylistically and contextually, Rosenstein-Rodan (1943) is very different from Young (1928), and hence, at a first glance, the works seem quite distinct from each other. The former is a highly applied piece of work, almost a policy prescription for the development of the region under analysis,<sup>33</sup> and the latter is a more theoretically

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<sup>30</sup> This field can be argued as having been newly re-emerged in the post war era, as by some counts much of the development of economics has been the emergence of development economics. For a view adjoining the roots of development economics to that of economics in general, see Lewis (1988).

<sup>31</sup> There has been much terminological discussion on whether 'big push' is the most appropriate term to describe this type of development effort. According to Nurkse (1961), the theory of the big push is nothing less than "the theory of development".

<sup>32</sup> The original 1943 contribution recognizes the presence of *technological* externalities (in the form of training of labor), but it clearly considers *horizontal pecuniary* externalities as the most important justification for the big push which seem to define his term, complementarities. Though admittedly, his discussion on "external economies" is unclear as after having discussed "complementarities" between industries (giving only examples of what can be interpreted as horizontal pecuniary externalities) he moves on to discuss that "two other types of 'external economies' will arise when a system of different industries is created. First, the strictly Marshallian economies external to a firm within a growing industry. The same applies, however (secondly), to economies external to one industry due to the growth of other industries" (ibid., 206; author's quotes in single quotes). This discussion bears resemblance to Young's macro level externalities and he later on in his 1961 contribution rightfully attributes them to him. In Rosenstein-Rodan (1984), he broadens the discussion on pecuniary externalities to both *horizontal* and *vertical* ones by recognizing the presence of this phenomenon on both demand and supply sides.

<sup>33</sup> The article was used as background material for a study group at the Royal Institute for International Affairs that met between 1942-45 (Rosenstein-Rodan 1984). The regional focus, Eastern and South-Eastern Europe, was chosen due to the fact that at that time, the government officials from this region



oriented discussion on the dynamics of growth. Furthermore, the context for the former work is on developing economies which observably are operating at a level below full capacity utilization,<sup>34</sup> while the latter's growth dynamics discussion focuses on developed, mature economies operating at full capacity.<sup>35</sup> However, a more thorough analysis of Rosenstein-Rodan's discussion on externalities and complementarities reveals that it bears great similarity to Young (1928) indicating a considerable intellectual debt to him.

Namely, the notions, which Rosenstein-Rodan (1943) and his subsequent contributions bring to the forefront as impeding factors to the development process in underdeveloped economies, represent the breakdown of the necessary conditions to Young's self-fulfilling growth: elastic demands and supplies for commodities as well as the absence of major indivisibilities. In other words, the key factors that necessitate a big push in Rosenstein-Rodan's view are market failures caused by the presence of pecuniary and technological externalities combined with indivisibilities in demands and supplies leading to, in essence, inelasticities in demands and supplies. These are precisely the same conditions mentioned above that Young highlights as "the complications of the real world situation" (Young 1928, 535).

From the perspective of development economics, Rosenstein-Rodan (1943) can be considered as a pioneering work that introduced the concept of external economies into economic development (Arndt 1955).<sup>36</sup> However, the merit and the significance of the article go far beyond this application, as the piece itself can be considered to mark the birth of post war development theory (see, for example, Chakravarty 1983).<sup>37</sup> Hence

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were in exile in London and the region consisted of countries with reasonably similar characteristics that facilitated the analysis (ibid.).

<sup>34</sup> Rosenstein-Rodan makes clear reference to below capacity utilization by making explicit assumption that "there exists an 'agrarian excess population'" (1943, 202; author's quotes in single quotes). Furthermore, the international context in his view also operates at below full capacity utilization as one of his arguments against autarkic (Russian) development model is that "[b]uilding up heavy industries in Eastern and South-Eastern Europe at a great sacrifice would only add to the world excess capacity of heavy industry, and would constitute from the world's point of view largely a waste of resources" (ibid., 203).

<sup>35</sup> Arndt argues that "the only possible source of market-widening increases in output which give rise to external economies, in Allyn Young's argument, is a rise in productivity, i.e., in the efficiency with which existing resources are employed. The possibility that the initial increase in output might result from the employment of hitherto unemployed factors of production does not enter in his argument" (1955, 195).

<sup>36</sup> A qualification on Arndt's point is that Rosenstein-Rodan (1943) discusses horizontal pecuniary externalities and refers to technological externalities. Rosenstein-Rodan (1961) further broadened the externalities discussion to vertical pecuniary externalities, though referred to Scitovsky (1954) for a discussion on them.

<sup>37</sup> Of the four major theoretical points applied into the context of developing economies in Rosenstein-Rodan (1943), only "the concept of 'pecuniary' external economies" is discussed and mere reference is made to "technological external economies" as well as "block of social overhead capital". Young's discussion on the externalities leading to increasing returns is broad enough to account for technological externalities that can lead to inelasticities in supplies, in addition to which he does mention the absence of indivisibilities as one of the key factors for the cumulative process to function properly. Especially, the latter notion gains importance in Rosenstein-Rodan's thought later on, though he does not make reference to Young. Given that Young's discussion centered on describing the operation of dynamic pecuniary external economies, it is the focus of the comparison with Young

through his influence on Rosenstein-Rodan's notion of pecuniary external economies (which encompasses the notion of complementarities and interdependence) that underlie increasing returns at the macroeconomic level, Young influenced the formalization of post war development theory and the debates it was to address.

As mentioned, Rosenstein-Rodan (1943) is an applied discussion on a possible solution for overcoming underdevelopment of a region. The contribution begins by highlighting the importance of the issue, its benefit to the global economy as a whole and then moves directly onto stating the underlying assumptions: the presence of labor surplus in agricultural sector in the form of disguised unemployment as well as the principle of international division of labor. The former is an application of a concept brought forward in Joan Robinson (1936),<sup>38</sup> while the latter notion bears close resemblance to Young's vision though it is adapted to an international context.

Rosenstein-Rodan sees the prevalence of externalities and complementarities as preventing the market forces under *laissez-faire* from guiding an underdeveloped economy along its *adjustment path* towards an optimal equilibrium. This, due to the presence of pecuniary and nonpecuniary (technological) externalities and complementarities,<sup>39</sup> is not appropriately taken into consideration by the existing institutional framework, and hence, a Pigovian divergence contaminates *laissez-faire* market signals. That is, within the existing incentive structure, social marginal net product is greater than that of the private one, and market forces are only 'optimizing' according to the latter, not taking externalities into account.

The existing institutions of international and national investment do not take advantage of external economies. There is no incentive within their framework for many investments which are profitable in terms of 'social marginal net product,' but do not appear profitable in terms of 'private marginal net product.' ... [An individual entrepreneur's] subjective risk estimate is bound to be considerably higher than the objective risk. If the industrialisation of international depressed areas were to rely entirely on the normal incentive of private entrepreneurs, the process would not only be very much slower, the rate of investment smaller and (consequently) the national income lower, but the whole economic structure of the region would be different. Investment would be distributed in different proportions between different industries, the final equilibrium would be

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in this paper. For an indepth discussion on the remaining application in Rosenstein-Rodan (1943), "concern with excess agrarian population", see Rosenstein-Rodan (1984). Rosenstein-Rodan's innovation in this context is *not* the concepts themselves, a claim that he makes in Rosenstein-Rodan (1984), rather it is the fact that he had the foresight to *apply* various concepts into the context of developing economies.

<sup>38</sup> This reference is made within the literature by Eckaus (1989), i.e., that Joan Robinson's disguised unemployment concept was incorporated into the development economics by Rosenstein-Rodan. None of Rosenstein-Rodan's contributions make specific reference to Robinson (1936) though she gets a mention as one of the "important predecessors of the theory of development" (Rosenstein-Rodan 1984, 207). The others are Harrod, Domar, Keynes, and Clark (*ibid.*).

<sup>39</sup> Strictly speaking, in his original contribution, Rosenstein-Rodan's notion of complementarities can only be considered as *horizontal* pecuniary externalities.

below the optimum ... (Rosenstein-Rodan 1943, 206-7; author's quotes in single quotes).

Market failures, largely caused by the presence of horizontal pecuniary and technological externalities, are the major reason for the big push, as the price mechanism cannot be relied upon to bring out the optimal outcome. If left to the market forces, technological externalities in training can create a Pigovian divergence, since it is not profitable for a private firm to invest in it when it risks losing its investment in the event the worker decides to leave to work for another enterprise (Rosenstein-Rodan 1943, 204-5). While his discussion on technological externalities is clear, the pecuniary externalities discussion is less so, and later papers (Rosenstein-Rodan 1961, 1984) clarify it, gradually extending the big push argument to vertical pecuniary externalities.

Pecuniary external economies are market-transmitted, inter-industry interdependencies. When occurring between wage good producing industries, they are considered to be horizontal. An establishment of a wage good producing industry creates an increase in the demand for the goods of other like industries and hence constitutes a complementarity between these industries. In a situation in which demands and supplies are inelastic and indivisibilities are prevalent, establishing such an industry is risky as an entrepreneur faces a risk of profit loss for not being able to sell his/her output. Rosenstein-Rodan's shoe factory example illustrates that diversity of human wants creates a necessity for a coordinated effort to generate a sufficient expansion of the market that reduces the risk for the individual entrepreneur. Hence a pecuniary externality of a horizontal type is present on the market. Rosenstein-Rodan (1984) also recognizes that a pecuniary externality can occur on the supply side as well, between an intermediate good supplier and a final good producer. In such cases, they are considered to be vertical.

It is interesting to note that Rosenstein-Rodan's vision implicitly assumes the necessity for proportionality and *balance* in production as highlighted by Young for Say's Law to function properly. It is the existing indivisibilities in the demands and supplies that prevent the operation of Say's Law in the case of an output expansion of the individual producer, hence depressing his/her incentive to invest. To overcome this, a sustainable expansion of the market is required in the form of a large coordinated development effort in complementary industries, as advocated by Rosenstein-Rodan.

While the theoretical discussion of the seminal contribution leaves much wanting, the greatest merit of the 1943 paper is undeniably that it ignited a new research program and introduced dynamic externalities à la Young into economic development. Rosenstein-Rodan (1961, 1984) clarifies the concepts of externalities in economic development in general and the theory of big push in particular, giving an in-depth discussion on pecuniary externalities, taking into account their horizontal and vertical dimension on both demand and supply sides.

Interestingly, similarities in the approaches of Young and Rosenstein-Rodan can be found as both seek to describe reality as accurately as possible and hence are critical of the methods popular among their contemporaries which are unable to capture the complexity of the phenomenon at hand and are especially incompatible with external economies. While the criticism on the inability of the general equilibrium apparatus to allow for external economies is stated at the outset by Young, it is left aside in

Rosenstein-Rodan (1943), though it is inherent in it, and later on formalized by the author:

This theory of the big push contradicts the conclusions of traditional static equilibrium theory in three respects ... it is based on a set of more realistic assumptions of certain indivisibilities and nonappropriabilities in production functions ... [it] deals[s] with the path to equilibrium ... in addition ... markets in underdeveloped countries are even more imperfect than in developed countries (Rosenstein-Rodan 1984, 211).

Hence a clear similarity in the visions of growth of these two theorists is their emphasis on its inherent disequilibrating nature. Young views the growth process as characteristic of disequilibrating forces, and therefore, a *moving equilibrium* is the only plausible option. Rosenstein-Rodan also explicitly describes a notion of disequilibrium in his theory. He describes how the less developed economy is not at equilibrium (or may be at an inferior one). He later on more clearly specifies the notion by stating that his analysis focuses on the economy's *adjustment path towards equilibrium* (Rosenstein-Rodan 1961, 1984).

The greatest departure between these two visions is that Young focuses on describing the cumulative dynamics of growth and merely mentions the necessary assumptions and that the process does not proceed at an even rate. Young recognizes that certain relatively strict conditions underlie the process of self-sustaining growth that he has described, namely, sufficiently elastic demands and supplies for each commodity as well as the absence of major indivisibilities. While recognizing these conditions and that a certain assumption of the level of development underlies this process, the case in which growth potentially stalls is not analyzed by Young. It is precisely these factors that Rosenstein-Rodan brings to the forefront in his analysis when he relaxes the stage of development assumption and applies external economies to developing economy context.

This shift in emphasis is a logical one as Young's focus is on describing the growth process of an advanced economy and that of Rosenstein-Rodan is the process of growth, or more appropriately, the absence of it in underdeveloped areas. This latter focus ignited a new field of economic inquiry and Rosenstein-Rodan's 1943 article, heralded as the seminal contribution on this new field (and through it Young), has much influenced those contributions that were to follow. Another pioneering development theory contribution, strongly influenced by the notions of complementarities and externalities à la Young, is Ragnar Nurkse's balanced growth doctrine is discussed in the following section.

#### **4 Ragnar Nurkse: theory of stagnation and theory of growth**

Ragnar Nurkse's theory of stagnation and growth also bears close resemblance to Young, perhaps slightly more so than Rosenstein-Rodan's contributions as Nurkse's theory, in which Young's notion of dynamic external economies is incorporated, entails a much more comprehensive vision of the growth and development process than that of Rosenstein-Rodan. In his analysis, Nurkse emphasizes the problems of achieving growth through capital accumulation and like Rosenstein-Rodan considers it as "not a

spontaneous and automatic affair” (1953, 14). With this in mind, he first sets the scene for what can be called as a theory of stagnation, after which he proceeds to discuss his theory of growth.

According to Nurkse, a vicious circle of poverty, “a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty”, is a possible, even a likely state of affairs, for a capital poor country (Nurkse 1953, 4). The concept clearly describes the presence of forces in an economy that can keep a country stagnated at a low income equilibrium. Therefore, the cumulative process of growth taken as given in Young’s vision is no longer automatic and rather, at low income levels, previously growth-promoting incentives are distorted in a fashion that they create forces that perpetuate *status quo* and prevent the cumulative process from igniting. It is most detrimental to development when the process of capital accumulation is affected by such a constellation.

Nurkse formalizes the possibility for a low investment level and capital accumulation spiral through supply and demand side arguments (Nurkse 1953). The *supply side* argument for a low level of investment in an economy stems from the country’s small amount of savings, caused by its low income level. The low income level is, in turn, a result of low productivity in the economy. Furthermore, low productivity is a direct consequence of small amounts of capital used in the production process, which in turn can be attributed to the low domestic savings available in the economy.

The *demand side* argument for stalled capital formation manifests itself through a process familiar to that discussed by Young and Rosenstein-Rodan. Namely, the low inducement to invest is caused by the small size of the market. The market’s low capacity to absorb goods is, in turn, a result of low income level in the economy due to its low productivity. Like in the supply side argument, low productivity is a direct indication of low levels of capital used in the production process, which in turn can be attributed to the weak investment stimulus prevailing in the economy.

Nurkse summarizes these circular arguments by concluding “a country is poor because it is poor” (Nurkse 1953, 4). It is apparent that common to both, demand and supply, sides of the argument is the low income level of the country, caused by low productivity of the economy. Furthermore, an important determinant of the productivity is the extent of capital used in the production process along with weak investment stimulus.<sup>40</sup>

Though he discusses both sides of the capital accumulation spiral, Nurkse mentions that the supply side is generally the one that receives more attention than the demand side. This is in accordance with the ‘capital fundamentalist’ thinking that dominated early development economics at the time, to which Nurkse also seems to conform. Furthermore, though he explicitly recognizes the demand side problem in capital accumulation, he moves on to emphasize the importance of the supply side in his discussion up to a point that prevents him from considering a general market expansion as a stimulus to growth as emphasized by Young.

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<sup>40</sup> Though Nurkse (1953) does emphasize the role of capital accumulation in the process of development, he does recognize that other factors, such as politics, human capital, and social attitudes, contribute to the economy’s productivity and the country’s low income level.

The lack of incentive to invest due to the small size of the market is at the heart of the demand side explanation (Nurkse 1953, 6).<sup>41</sup> He follows Young and Rosenstein-Rodan by assuming that the size of the market influences the incentive for a private individual or a firm to invest, making direct reference to Young (1928). As a matter of fact, the mechanism through which the demand side constraint takes place is identical to Young's view of cumulative process of growth generated in the presence of the positive externalities in an economy, though Nurkse describes the 'other side of the coin' so to say by explaining how this cumulative process can fail, leaving a country stagnated at a low income level.

Nurkse argues that two major factors contribute to formation of a vicious circle type of constellation of forces within an economy. First, he discusses how capital investment is necessarily 'lumpy', characteristic of relatively large units that are indivisible. Hence, in the context of a relatively small market, the mere fact that the application of capital is in relatively large units and requires relatively large investments increases the risk to invest in it and thus reduces the incentive to do so. At early stages of development, this phenomenon is coupled with inelasticities of demands, inherently more prevalent at low income levels, and hence the risk of capital investment is augmented and the market incentive to invest in capital equipment is further reduced.

After explaining his 'theory of stagnation', Nurkse proceeds to explain his 'solution' for the vicious circle dilemma and therefore, he turns to his theory of economic growth, also known as the 'doctrine of balanced growth'. Though it is important to note that he clearly sees the theory of stagnation and that of growth as two sides of the same process as he states that "[theory of stagnation] however, is only part of the story. The circular constellation of the stationary system is real enough, but fortunately the circle is not unbreakable. And once it is broken at any point, the very fact that the relation is circular tends to make for cumulative advance. We should perhaps hesitate to call the circle vicious; it can become beneficent" (Nurkse 1953, 11).

The doctrine of balanced growth entails a method of expanding the size of the market and, in this way, reinvigorating investment incentives that were previously suffocated, thus enabling the economy to embark on the path to development and growth. The notion of balance is essential as the demands of industries are interdependent due to the 'diversity of human wants'. Hence "a more or less synchronized application of capital to a wide range of different industries" is required to generate a broad-based expansion of the market.

Here, in a nutshell, is the case for balanced growth. An increase in the production of shoes alone does not create its own demand. An increase in the production over a wide range of consumables, so proportioned as to correspond with the pattern of consumers' preferences, does create its own demand. It goes without saying that, with given labour force and with given techniques and natural resources, it is only through the use of

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<sup>41</sup> Given that the similarities between the visions of growth of Young and Nurkse are of interest and that Young's notions are more related to the demand side of Nurkse's argument, it will be the focus of the discussion. However, reference to Nurkse's theory's supply side emphasis and the ensuing suppression of demand as a source of economic growth is also made.

more capital that such an increase in production can be obtained (Nurkse 1953, 12).

It is evident that much of Nurkse's vision of stagnation and growth is similar to the process of growth envisioned by Young. First, the notion of industry interdependence and the necessity for *balance* is present in the visions of both authors as can be expected given that both assume the aggregate notion of Say's Law, which in the presence of the diversity of human wants can only hold when certain economic activity is assumed. "[An] aggregate of productive activities, tied together by trade—carries with it the notion that there must be some sort of balance, that different productive activities must be proportioned to one another" (Young 1928, 533).

Second, the possible inelasticity of demand is considered by both as a significant hindrance to the cumulative growth process. While demand inelasticity is one of the obstacles to the self-sustaining process of growth, among inelasticity of supply and general discontinuity of progress, as described by Young, Nurkse brings demand inelasticity to the forefront as he sees it as inevitable, an inherent characteristic at low income levels. It is precisely demand inelasticity that leads to the depressed investment incentives in an environment in which the market size is small.

Third, once again as with Rosenstein-Rodan, the possible presence of increasing returns is present in Nurkse as with Young. Similarly, Nurkse considers external economies generated by generalized market expansion perhaps the most important factor leading to increasing returns. "It may be that the most important external economies leading to the phenomenon of increasing returns in the course of economic progress are those that take the form of increases in the size of the market" (Nurkse 1953, 14). Hence both envision the possibility for cumulative, self-sustaining growth, though given the differing research foci of Young and Nurkse, the former author's focus is on describing how this growth is generated within the system, while the latter's focus is on describing the difficulty of initiating the before-mentioned process.

Fourth, the importance of demand and market incentives for growth is present in both visions. As Young emphasizes the importance of market size and interdependence of industries, the role of demand and incentives for growth is more implicit, although when he briefly discusses the obstacles to the cumulative growth process he does recognize the inelasticity of demand. Nurkse's contribution, in turn, makes the role of demand and market incentives on growth explicit by analyzing the demand side of the capital accumulation spiral. It must be noted, however, that Nurkse's focus is a bit more narrow than that of Young in a sense that he focuses on the supply and demand dynamics of capital accumulation, and hence, his emphasis on the importance of supply side is apparent, which is the most important difference between these two visions.

As mentioned, Nurkse emphasizes the supply side of the capital accumulation spiral and considers it as a more important obstacle to the process of growth and development. When discussing the supply side, though occasionally referring to the smallness of domestic market causing depressed investment incentives in reference to its relevance to the infant industry argument and how it influences the nature of foreign direct investment flows, Nurkse refrains from considering that a general expansion of consumption is beneficial to growth. His emphasis on the supply side focuses his attention to the problem of accumulating investment funds and any such funds that are directed to consumption instead of saving slows the process of capital accumulation and

hence economic growth. He argues that “the general economic problem ... is to direct as much as possible of the increment in real income into saving and to allow as little as possible of it to go into an immediate increase in consumption” (Nurkse 1953, 146-7). Clearly, the feedback between supply and demand (endogeneity of supply and demand) that promotes dynamic growth in Young is missing in Nurkse’s analysis, which considers that a sustained market expansion can only be achieved through an increase in productivity resulting from an increased usage of capital in the production process.

Despite the differing emphasis in the process of growth and development, the demand side view of the theoretical thought of Nurkse bears a close resemblance to Young. Bringing the obstacles to this cumulative growth process as described by Young (inelasticities of demands and supplies and indivisibilities) to the forefront enables Nurkse to relax the stage of development assumption and, in this way, to broaden this theory of cumulative growth to account for the development or, rather, the underdevelopment experience of the developing world.

## **5 Concluding remarks**

Young can be considered as an originator of the dynamic vision of growth that described a cumulative, self-generating growth process of a mature market economy. This vision influenced the post war development theory as its pioneers applied its notions to the developing country context to explain the process of development and growth. Rosenstein-Rodan (1943) bears great significance as the innovator in bringing dynamic external economies into the context of developing economies. Ragnar Nurkse’s theoretical contribution, in turn, is momentous as through his theories of stagnation and growth, he can be considered as having generalized Young’s vision of growth to a dynamic description of the process of development in market economies.

The discussion on this previously unexplored linkage illustrates how substantial portions of Young’s ideas were incorporated into the economic analysis of developing countries by these economists. Hence this paper has established a linkage between the classical growth theory and the early development theory. Allyn Young’s vision of endogenous growth fuelled by dynamic externalities and increasing returns clearly bore much influence on the theories of ‘big push’ and ‘vicious circle and balanced growth’ by Rosenstein-Rodan and Nurkse, respectively. While Young recognized the conditions that hamper the cumulative growth process, inelasticities of demands and supplies and the presence of indivisibilities, the case in which the growth process potentially stalls is not analyzed by him. In essence, by relaxing the stage of development assumption made and recognized by Young, it is precisely these factors that Rosenstein-Rodan and Nurkse bring to the forefront in their theories when they discuss the absence of growth in the developing world. Hence, through his influence on these two notable pioneers of development economics, Young’s dynamic external economies have influenced the core debates and discussions within this field.

Though much of Young’s thought was incorporated into these pioneering contributions, it must be recognized that it was done so in a partial fashion. While Young’s vision of growth entails a balanced view between supply and demand sides, a clear shift in emphasis to the supply side is apparent in the theoretical thought of both development theorists discussed as well as in the subsequent contributions within this field. While the



supply side emphasis is notable in Rosenstein-Rodan's policy recommendation to overcome the problem of underdevelopment, a coordinated investment effort to generate a sufficient expansion of the market, it is explicit in Nurkse's supply side discussion, where he considers any funds directed to consumption instead of saving as a leakage that slows down capital accumulation and hence as undesirable from a development perspective.

With hindsight, this bias towards supply side seems a bit puzzling when considering that the prevalence of externalities within the market is considered to lead to a market failure due to improper incentives. While capital accumulation can lead to a productivity increase and hence to an expansion of the market, the demand side problem, causing the suppression of investment incentives, is equally important to this process as incentives can assist in formulating more effective development policies, by providing valuable information on the conditions prevailing on the market.

To conclude, this paper has made an extension to history by exposing the link between Young, and the development economics pioneers, Rosenstein-Rodan and Nurkse. Hence by recognizing this theoretical linkage, the prevailing view within the history of thought literature is to some degree challenged as, in light of these contributions, Allyn Young is not a 'case of neglect'. Young played an important role as a modernizer of external economies notions and as an innovator as he incorporated these externalities into his vision of endogenous growth of a developed market economy. Rosenstein-Rodan, on his part, brought Young's dynamic external economies into the context of developing economies, and by doing so, he provided a critical impulse for a new body of literature to form. While contributing to this novel field within economics, Nurkse generalized the vision of growth and development by recognizing the potential of persistent stagnation and the ensuing growth once again by applying Young's notion of dynamic external economies. As he described the process of stagnation in underdeveloped market economies, he clearly builds a broader perspective to the process of growth and development to that of Young. Young, though he recognized obstacles to his growth process, did not discuss them as he focused on describing the cumulative nature of the growth process entailed in his vision.

Young's vision of growth describes a cumulative process in advanced, mature economies, fuelled by dynamic externalities created by forces operating on both demand and supply sides, emphasizes the size of the market as a fundamental driving force of this process. While clearly this vision influenced the early development theory, a fundamental aspect of Young's vision got lost when incorporated into developing country context. Perhaps due to the shift in focus to underdeveloped regions where scarcity of capital and skilled labor as well as indivisibilities (fixed costs) can be argued to be more prevalent than in the developed regions, a shift in emphasis in development theory contributions is apparent. Namely, though both demand and supply side mechanisms are recognized in the development theory contributions discussed, both pioneers as well as the early development theory literature in general clearly has placed more emphasis on the supply side when formulating their policy descriptions.

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