

Rural Labor Mobility in the Process of Industrialization under Triple Dimensions: Time, Space, and People

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Abstract

Rural-to-urban labor migration in developing economies, if beyond employment absorption capacity, is both a symptom of underdevelopment and the factor that exacerbates underdevelopment. Although various theories in development economics, in particular, the dual economy, together with numerous migration literature, bore intention to explore a balanced development approach in rural labor mobility, content-based studies are often overwhelmed, whereas the context/circumstance-based angle (like industrialization) in the research of labor mobility is always neglected. This paper reviews, under an ancient Chinese epistemological methodology that consists of time, space, and people, labor mobility theories. It combines the old institutionalist and new structuralist schools of thought, searching a dynamic theoretical framework to deconstruct the overarching labor mobility in the process of industrialization.

Keywords: Labor Mobility, Industrialization; Labor Absorption.

Resumen

La migración laboral de las áreas rurales a las urbanas en las economías en desarrollo, si está más allá de la capacidad de absorción del empleo, es tanto un síntoma de subdesarrollo como el factor que exacerba el mismo. Aunque varias teorías en la economía del desarrollo, en particular la economía dual, junto con numerosas publicaciones sobre migración, tenían la intención de explorar un enfoque de desarrollo equilibrado para la movilidad laboral rural, los estudios basados en el contenido a menudo están excedidos, mientras que el ángulo sobre el contexto/circunstancia (como la industrialización) en la investigación de la movilidad laboral siempre se descuida. Este artículo revisa, bajo una antigua metodología epistemológica china que consiste en tiempo, espacio y personas, las teorías de la movilidad laboral. El artículo combina las viejas escuelas de pensamiento institucionalistas y las nuevas escuelas estructuralistas, buscando un marco teórico dinámico para deconstruir la movilidad laboral general en el proceso de industrialización.

Palabras claves: Movilidad laboral, industrialización; Absorción Laboral.

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Introduction

Substantial rural-to-urban labor mobility was kicked off along with the first industrial revolution and it was highly determined by the general process of industrialization. To date, almost four centuries passed and its history is too specific to be remember all the details, especially those seemingly “insignificant”. To a great extent, if Marx is right that a country that is more industrially developed shows to the less developed the image of its own future, then perhaps studying labor mobility of earlier industrialized countries (EICs) will provide an appropriate analytical framework. Exactly as Breman (2016) underlined, “the research promoted of developing countries from the early 1970s onwards is hampered by the virtual lack of comparison with the profound restructuring from an agrarian-rural to an industrial-urban workforce that went on in the western part of the world at an earlier stage”. This structural transformation is what we mean by the context-based angles to the research of labor mobility, which contains the very tempo-spatial-anthropological dimensions that deserve more theoretical exploration.

Prior to the industrial revolution, an overall economy was much dependent on agricultural production or rural economy. However, ever since the industrial revolution took off, sectors, in particular industry and merchandise rapidly developed. In reframing new sectoral compositions, dramatic changes lie. On the one hand, in the flourishing industries that led massive job creation, while on the other hand, in applying science and technology or through land reform that left more people as “surplus labor” for other sectors. Thus, along with this process, almost all EICs in history were characterized by the massive transfer of labor from agriculture to industry and service, as well as from rural to urban areas. However, this immense process was based on a full-employment assumption, which is what we called “insignificant” details of labor absorption. These details in such a transformation has always been neglected, or often taken for granted as a simplistic “natural” result in many contemporary mainstream analysis of development economics.

For many least developed countries (LDCs), more than half a century has passed since the end of WWII. Regardless of who had managed to transfer their major population to urban areas, the vast majorities (most in Africa and Asia) not only failed to be industrialized, but also remained underdeveloped. According to the World Bank, this represents more than one third of population engaging in agricultural activities and more than half of population living in rural areas. Even worse, nearly all LDCs at the same time emerged deteriorating situations in urban areas, such as urban poverty, high unemployment, slummification of cities, growth without employment, etc. As estimated, nowadays, one billion people worldwide still live in various forms of slums, and the number is projected to double by 2030 (Davis, 2004). Among the majority, the population in slums are mainly concentrated in developing countries and have increased from 689 million in 1990 to 880 million in 2014 (Habitat, 2007).

Comparing to the historical situation of EICs, three aspects of the Fisher-Clark hypothesis can be provided (Clark, 1951; Fisher, 1945), which articulate inherent relations among economic growth, industrial structures and labor transfer. In short, industrial structural process, labor mobility transition and demographic transformations are summarized as follows. In terms of industrial structural process, first, many EICs demonstrated rather a synchronous process of employment distribution, while the LDCs manifested an asynchronous way. Generally, it takes centuries for most of EICs to reduce its employment in agriculture, although the declining process speeded up ever since the industrial revolution (Allen, 2000; Cai, Du, and Wang, 2003). But along with the process, it is found that the declining rate of rural

population was much slower than that of agricultural population (see Table 1). On the contrary, LDCs transferred rural labor force much faster than EICs (D. X. Rong and Sima, 1989), for example, according to the World Bank, it only takes half a century to reduce 50% of the proportion in the Latin American region. This transformation may be referred in absolute terms as most of agricultural employment shifted to urban areas (Todaro, 1969).

Table 1: Estimated population distribution, 1300-1800 (UK, France, and Germany)

Year	United Kingdom (%)				France (%)				Germany (%)			
	Urban Pop.	Rural Non-Agr.	Agr. Pop.	Rural Pop.	Urban Pop.	Rural Non-Agr.	Agr. Pop.	Rural Pop.	Urban Pop.	Rural Non-Agr.	Agr. Pop.	Rural Pop.
1300	4.4	19.2	76.4	95.6	NA	NA	NA	NA	NA	NA	NA	NA
1400	8.0	18.4	73.6	92.0	10.8	17.8	71.4	89.3	11.1	17.7	71.1	88.9
1500	7.2	18.5	74.3	92.8	8.8	18.2	73.0	91.2	8.2	18.4	73.4	91.8
1600	9.7	21.7	68.6	90.3	10.8	21.4	67.8	89.2	8.5	22.0	69.5	91.5
1700	16.9	28.2	54.9	83.1	12.4	24.5	63.2	87.6	7.7	25.8	66.5	92.3
1750	23.0	32.3	44.7	77.0	12.7	26.2	61.1	87.3	8.8	27.4	63.8	91.2
1800	28.8	35.6	35.6	71.2	12.9	27.9	59.2	87.1	9.4	29.0	61.6	90.6

Note: data estimated by changing the notions and regions, like England, United Kingdom, and the Great Britain; “Pop.” refers to “population”, “Agr.” refers to “agricultural”.

Source: (Allen, 2000).

Second, along with the falling of agricultural value-added to GDP, its corresponding employment share was also reduced. The actual situation revealed a comparatively synchronous employment allocation process in most of the EICs (see Table 2), and an asymmetrical way in the LDCs (Todaro, 1969). Almost all LDCs are in the same situation, as the agricultural sector has a much larger labor force than it weighed for the entire economy. One extreme example can be taken from China, which in 1978, 70% of total employment in agriculture only produced 28% of the GDP value, as well as 60% to 22% of India, 21% to 5% of Brazil, 47% to 29% of Kenya, and 18% to 3% of Mexico in 2000 (World Bank, 1984; C. Li, 2017).

Table 2: Synchronous Employment Distribution in the Corresponding Sector of the EICs

	Agr./G NP	Agr. Emp./ Total Emp.	Ind./G NP	Ind. Emp./ Total Emp.		Agr./ GNP	Agr. Emp./ Total Emp.	Ind./ GNP	Ind. Emp./ Total Emp.
UK					France				
1770	45	36.8 (1750)	24	NA	1789/ 1815	50		20	
1841	22	21.7 (1851)	34	29 (1801)	1872/ 1882	42	43 (1866)	30	38
1901	6	8.7	40	45	1908/ 1910	35	30 (1911)	37	39
Germany					USA				
1860/ 1869	32	51 (1861-1871)	24	28 (61-71)	1839	69	68 (1840)		NA
1905/ 1914	18	35.5	39	38	1879	49	NA		30 (1870)
					1910		32		41

Note: 'Agr.' refers to agriculture, 'Ind.' refers to industry, and 'Emp.' Refers to employment.

Source: X. H. Chen, 1990; Todaro et al., 1988; and Z. H. Wang, Sun, and Tao, 1995; Zorn, 1971.

Third, regarding labor mobility compared to urban growth, it was found a modest interaction in EICs (Allen, 2000; L. L. Jiang, 2008; Z. H. Wang et al., 1995), whereas an aggressive situation in LDCs. For example, the proportion of urban population in the United States took nearly 70 years to gradually reach its urbanization rate from 15.3% in 1850 to 51% in 1920. France took almost 80 years from 25.2% in 1851 to 51.2% in 1931; and the UK took almost a century to rise from 25% in 1750 to 50.2% in 1851 (Xiao, 1997). Moreover, the process of industrialization in Western Europe was much faster than its process of urbanization in the 19th century, and the employment proportion in the industry was always higher than of people living in urban areas. However, in almost all LDCs, the proportion of urban residents has far exceeded the share of manufacturing employment (Todaro, 1969). The developmental path of manufacturing or industry in many LDCs has shown a similar pattern of economic growth in the initial stage, without equivalent growth in employment (Bairoch, 1979).

In terms of labor mobility transition, two aspects can be reviewed. Regarding internal mobility, the pattern of rural labor mobility is closely linked to their economic structures in most EICs and demonstrated a symmetrical process of both economic growth and labor mobility (Todaro, 1969). For instance, the growth rate of rural migrants in EICs was slower than the rate of urban population growth (Clapham, 1966; Z. H. Wang and Huang, 1999). However, the situation in LDCs revealed a sharp contrast, as not only the average annual growth rate of the urban population itself was more than twice that of the EICs, but the growth of rural migrants in urban areas was also generally higher. While as for international labor immigration, different from most LDCs today, rural-to-urban labor mobility for EICs had a special condition at that time. From the mid-19th century to the beginning of the 20th century, an important way of transferring the agricultural surplus population in Western Europe was through transnational

immigration (Todaro, 1969). Currently, such condition does not exist in LDCs; instead, a new phenomenon, brain drain, has substantively emerged among most LDCs and becomes a severe and striking issue (Carrington and Detragiache, 1998; Tanner, 2005). This not only because it seriously affects the structure and prosperity of economic growth due to the great loss of professionals and technicians, but also because it profoundly impacts the characteristics and development prospects of developing countries (Scherrer and Verma, 2018).

Demographic transformation has been always one of the most fundamental issues in the study of labor mobility. The demographic transition in EICs was well embedded in the process of industrialization and modernization, and it was more or less endogenous with a gradual process (Kitching, 2010; Zhang, 2016). Both birth rate and mortality rate took a long time relatively to decline the overall population growth (Todaro, 1969; Z. H. Wang et al., 1995). Nevertheless, compared to that in LDCs, due to the fact that both industrialization and modernization have been “compressed” over time (Demeny and McNicoll, 2006; Todaro, 1969), the corresponding demographic transition has been deeply compressed as well. Namely, the change in mortality has been greatly shortened, but the change in fertility has been relatively delayed. Generally speaking, the demographic transition in the EICs of the West is a balanced and external-intensive transition that is compatible with its economy and social culture (Cipolla and Huang, 1993). That is to say, when the demographic transition is at a high growth stage, namely with high birth rate and low mortality rate, it is also when the path of modernization/industrialization is gradually embarking on. The tension of the modern industrial sector is able to absorb the growing economically active population. However, many LDCs are in an unbalanced, even “compressed”, demographic transition (J. X. Li, 2000). On the one hand, the birth rate of developing countries after WWII also experienced rapid growth, and has been higher than of Western Europe during their population boom (Y. M. Wang, 1995). On the other hand, although it is still higher in LDCs than in developed countries, in terms of mortality rate, thanks to the widespread improvement of sanitary and medical conditions through the control of infectious diseases, the difference is much less than of birth rate. For example, in Mauritius, it took only seven years for the mortality rate to fall from 27% to 15%, while England and Wales, France, Germany, etc., spent more than 100 years (Cipolla and Huang, 1993).

In this context, substantial and accumulative social problems emerged, which can be summarized as follows: the widespread of slums, severe urban poverty, worsening inequality, deteriorating urban unemployment, shortage of urban housing, traffic congestion, poor sanitation, pollution, limited infant/and school-age schooling, among others. This was a consequence of premature cities, which were not only disorganized with poor sanitary and living conditions, but also unprepared to receive massive rural migrants. A similar situation also occurred in the EICs (Engels, 2005), which took them centuries to solve. However, the situation looks more urgent and nerve-racking in LDCs today. As a result, both the informal sector and slum become labor reservoir of rural migrants. For example, employment in the informal sector accounts for 65% of total employment in Asia; 72% in the southern Africa region; 48% in North Africa; and 51% in Latin America (Todaro, 1969). Regarding the slummification of cities, residents living in slums account for more than one-third of the entire urban population in most developing countries. Even worse, some account for more than 60% of their urban population (Davis, 2004).

The rural-to-urban labor mobility/migration, if beyond employment capacity (urban labor absorption), is both a symptom and a factor that exacerbates underdevelopment in the third world. Although in 1978,

90 out of 116 developing countries had tried to implement various policies in the light of the research derived from United Nations, with the aim of reducing or slowing down the process of rural-to-urban labor mobility (Todaro, 1969), the results were far from being satisfactory. There was a tendency towards the informalization of the economy, urban slummification and rural marginalization, etc. Then what should this be attributed to? Or should we review the context-based conditions in determining the processes of industrialization? For instance, those distinct to EICs 19th century competitive phase of capitalism vis-a-vis LDCs 20th century monopolist phase of capitalism. In particular, how the process of industrial, demographic, as well as social and political structures have been compelled to match the dynamic stage of capitalist development to reframe labor mobility conditions? Unfortunately, these angles of research are often missing.

Time, space and people consist of one of the epistemological frameworks of the Chinese archaic methodology, targeting most forms of being/existence, including metaphysical concepts, values and theories. Based on such ontological angles, this framework offers rather a real reflection of existence among other findings. Labor mobility, not different from any other human activity, is always under a certain time, space, and people/consciousness. Thus, the dynamic paradigm (as entangled among time, space and people), can be used as an analytical tool. This considers context-based and content-based applicability and compatibility of theories in labor mobility and also it puts forward a more appropriate frame of reference to guide empirical research. One complete time cycle, combined with a certain space and people as the background of its logical deduction, can be used as a frame of reference for theoretical selection and as base for theoretical evaluation. Additionally, it can also be used to explain and compare the background of the real world. The longer timelines and the broader spatiality, the more accurate approach to reality.

Theories of rural labor mobility in Marx's discourse

To deeply understand labor mobility, one has to bring it back to the capitalist discourse. It is significantly crucial to understand the fundamental rationale of how labor has been produced, mobilized and utilized in the political economy. Although Marx did not exclusively address labor mobility/migration, articulations of labor mobility can be found almost everywhere in Marx's Manuscripts (1844) and *The Capital* (1867). In general, Marx through the primitive accumulation of capital, the capitalist mode of production, social division of labor, reserve army of labor, etc., provided a great foundation and valuable references for the rationale of labor mobility. Specifically, three targeting points are set to elaborate Marx's intelligent legacy, which are presented below.

Production of Labor Surplus (produced)

The primitive accumulation, coupled with the general accumulation of capital, produce and reproduce the surplus labor force. In the primitive accumulation, the inevitable result and prerequisite of the capitalist mode of production is the force to produce a large number of surplus labor for capital accumulation. Essentially, Marx's primitive accumulation of capital is the use of violence to deprive means of production of small producers/peasants. In order to obtain the initial capital, small producers/peasants convert to free labor. The reproduction of capital produces an increase in the bourgeoisie. Thus, one pole is comprised by capitalists, and the other by wage workers. In other words, the surplus labor force is intrinsically linked to the capitalist model of production, especially the rationale

of primitive accumulation of capital. In Marx's words, in 'The Capital's chapter 'The Secret of Primitive Accumulation, "[...] those moments when great masses of men are suddenly and forcibly torn from their means of subsistence, and hurled as free and "unattached" proletarians on the labor-market. The expropriation of the agricultural producer, of the peasant, from the soil, is the basis of the whole process [...]" (1867, Vol. I, Chap. 26).

The further separation of laborers and means of production creates the conditions for capital accumulation, and in turn, reproduces the surplus labor force. In the discourse of general law of capitalist accumulation, Marx pointed out that "[...] capital works on both sides at the same time. If its accumulation, on the one hand, increases the demand for labor, it increases on the other the supply of laborers by the "setting free" of them, whilst at the same time the pressure of the unemployed compels those that are employed to furnish more labor, and therefore makes the supply of labor, to a certain extent, independent of the supply of laborers. The action of the law of supply and demand of labor on this basis completes the despotism of capital [...]" (1867, Vol. I, Chap. 25).

Relative Surplus Laboring Population (reproduced)

The surplus laboring population then becomes a necessary product of capital accumulation or the development of wealth on a capitalist basis. This surplus population becomes, conversely, the lever of capitalist accumulation - a condition of existence of the capitalist model of production- (Marx, 1867). For Marx, labor surplus forms a disposable industrial reserve army, that completely belongs to capital. As such, when capitalism develops, the organic composition of capital will increase, which means that the mass of constant capital grows faster than the mass of variable capital. Fewer workers are needed to produce society's requirements. In addition, capital will become more concentrated and centralized in fewer hands. Hence, for Marx, this being the absolute historical tendency, part of the working population will tend to become surplus to the requirements of capital accumulation over time. Paradoxically, the larger the wealth of society, the larger the industrial reserve army will become. Once capital enters into agriculture, it induces the increase of organic composition of capital in this sector. Therefore, the demand for capital for labor is absolutely reduced, and form the rural surplus labor force. To be noted, this mechanism of the reproduction of the surplus labor force is much more subtle than the one forcefully produced.

Social Combinations of the Labor Process (mobilized/utilized)

Regarding labor mobility, Marx follows the capitalist distribution principle and redistribution of social labor, through the social combinations of the labor process. This exposes the industry nature, which needs variation of labor, smooth functioning, and universal mobility of the laborer, setting the fundamental rationale of labor mobility for the industry. As Marx analyzed, "[...] by means of machinery, chemical processes and other methods, it is continually causing changes not only in the technical basis of production but also in the functions of the laborer. At the same time, it thereby also revolutionizes the division of labor within the society, and incessantly launches masses of capital and of workpeople from one branch of production to another [...]" (1867, Vol. I, Chap. 15).

In addition, Marx also critically pointed out the role of the capitalist state in such a process of labor mobility. "[...] the pretensions of capital in embryo — when, beginning to grow, it secures the right of

absorbing a quantum sufficient [sufficient quantity] of surplus-labor, not merely by the force of economic relations, but by the help of the State [...]” (1867, Vol. I, Chap. 10). The Closure Moment has witnessed and exposed how brutal the state through legislation mandatorily transfer people into free labor for industrial development.

In summary, in order to obtain the initial capital (primitive and capital accumulation) and labor (industrial reserve army) for the development of modern industry, for Marx, labor transformation (rural labor mobility) can be understood as the process of using state’s absolute power to deprive farmers (small producers) of means of production, transfer them as “free labor” and reconfigure the overall social resources for the development of capitalism. Therefore, labor mobility and the relative surplus population are deeply rooted in the capitalist mode of production. The primary accumulation of capital, as well as the general capital accumulation, set their mechanisms to the production of labor surplus. To be noted, the labor surplus is a concept more referenced in the theory of development economics, which is different from the Marxist term on “Surplus Labor”.

Theories of Rural Labor Mobility in Relation to Industrialization

In order to draw back our attention to the domestic/internal labor mobility, especially for LDCs early development stages, selective theories of the dual economic framework will be discussed in detail. As Ranis (1988) articulated, because the interaction between the agricultural and non-agricultural sectors were at the core of economic development, the dualistic labor market theory provided an effective, empirical, and practical analytical framework. Moreover, even if the dual economy of developing countries has developed to a certain stage, as long as an integrated economy has not yet been achieved, the dual theory will not lose its guiding value (Ranis, 1988).

Lewis’ Dual Economic Model

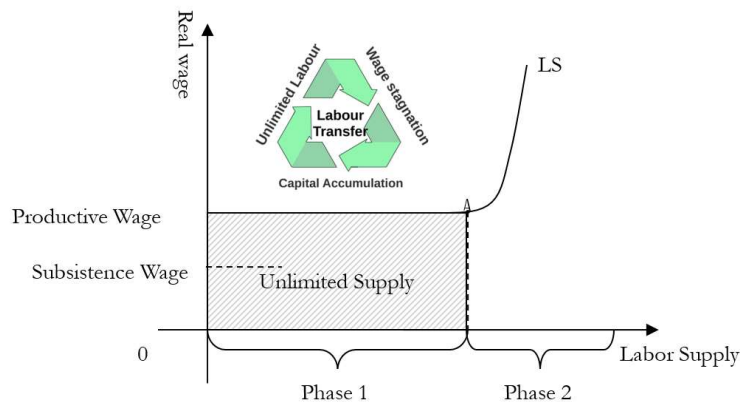
Avoiding the original “sin” of the Marx’s primitive accumulation of capital, combining industrialized countries’ historical experience on labor supply, and the situation of LDCs that lack the “First Pot of Gold”¹, the concept of labor surplus is found prominently in literature of development economics (Ranis, 2004). This literature mostly targets underdeveloped and overpopulated economies. Arthur Lewis succeeded in producing an “ideal” model of development approach for LDCs. He takes the “unlimited supply” of labor centered core “secret”. In short, economies develop basically by reallocating the surplus agricultural labor to industries and services. This leads a way so that new industries can be created and old industries can be expanded without limiting the existing wage level. In other words, “free” of cost for the early development of industrialization. This rationale results in higher returns to capital, leading to reinvestments (if so) in the initial capital expansions. In turn, the ascending capital stock leads to expand employment by drawing further surplus labor from the agricultural sector. Until the real exhaustion of the surplus, as claimed by Lewis, the process is a self-sustaining circulation of modernization and economic development (see Figure 1).

Lewis did not fully consider time dimension, or in other words, at what stage of development his model might be adopted, and how long could it not. Inexplicitly, there are two stages, wherein the second stage, classical economics ceases to apply. According to Lewis, as cited by Jorgenson (1998, p. 88) “[...] then

¹ Here it refers to the primitive capital accumulation, or the basic capital, to take off.

we are in the world of neoclassical economics, where all the factors of production are scarce, in the sense that their supply is inelastic. Wages are no longer constant as accumulation proceeds; the benefits of improved technology do not all accrue to profits; and the profit margin does not necessarily increase all the time [...]”. Obviously, his theory mainly refers to the first stage. As can be concluded: wage, at the subsistence level, and labor, as the unskilled surplus, as main characteristics in the labor market, lead the development without paying extra wage. The surplus labor is the source of the surplus capital, and the surplus capital reinvested creates employment that further absorbs more surplus labor force.

Figure 1. Lewis Model



Source: Lewis (1954).

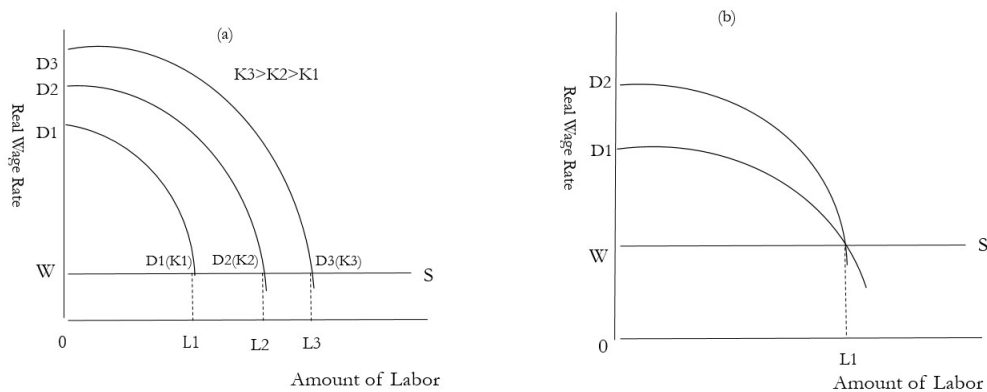
The idea is rather skeptical since it offers slick opportunities for LDCs to develop with a “free of charge” prescription. It can be highlighted that new economic development strategies, derived from existing theories (such as Dependency Theory), are much dependent on external capitals than the utilization of its domestic labor resources, especially when they are considered as “surplus”. In reality, as few LDCs could manage to develop, the dual sector model offers a theoretical framework in the research of rural labor mobility. As projected by Lewis, the capitalist sector is the part of the economy which uses reproducible capital and pays capitalists for its use. Meanwhile, in the subsistence sector can be considered all the part of the economy, excluding labor and land. The process of economic development basically consists of the re-allocation of surplus agricultural workers to the industry. At the first stage of development, as long as wage in the capitalist sector is slightly higher than that in the subsistence sector, the supply of labor becomes infinite to the demand of labor. As such, the capitalist sector expanded, as it is nourished by absorbing the surplus labor, for a period without any pressure to raise wages.

Apart from a simple and inconvincible assumption on people’s motivation to mobilize (which will be further elaborated in the following section), economic factors or absolute wage differences set the sole motivation of rural labor. Taking mobility as a rational choice of people, Lewis (1955) stated that “[...] men will not leave the family farm to seek employment elsewhere if the wage is worth less than what they would be able to consume if they remained at home [...]” (p. 409). Does such rationality hold its ground at the first stage of labor mobility? Further discussion will be articulated with great concern. Another fundamental assumption is made on the full employment of urban sector. Regardless of its actual capabilities and political will, which depends on the model of industrial development and investment preference in the usage of the capital stock. The model is basically on the process of labor transfer and

the growth of employment in the modern sector, which are all brought by the increase in production of this sector (Todaro, 1969). However, this is contradictory to the reality in LDCs. That is to say, if the reinvestment of capital stock is made in the real economy (productive activities), rather than in the capital outflows or the virtual economy, Lewis' circulation will inevitably promote employment, and continue its mechanism.

As shown in Figure 2(a), when capital (K) moves right forward, it results in the movement of corresponding labor demand and supply curves, meaning job creation. But in another possibility, even in the initial phase of industrial development, not all the reinvestments are guaranteed in the productive sphere. The capital accumulation could also flow into the financial arena, or even on speculation, not generating job creation. In reality, some are partly involved in productive activities. However, large-scale adoption of labor-saving technologies kept massive labor force out the process. As Figure 2(b) manifested, higher capital investment did not bring higher demand for labor, and of course, no job creation. This then flaws Lewis' fundamental rationale. In summary, saving and investment become the driving forces when it comes to the economic development of underdeveloped countries.

Figure 2. Job creation in the Lewis' circulation



Source: Todaro (1969).

Ranis-Fei's Labor Surplus Economy Model

On the other side of the economic dualism, regarding agricultural and rural development, Lewis' ideology reflects a linear and dichotomic developmental epistemology. Namely, the reduction of the agricultural sector is due to the expansion of the industry. Contrarily, John C. H. Fei and Gustav Ranis, by taking historical examples of the dualistic economy of Japan, South Korea, Taiwan, amongst others, assert that their successful experiences were much based on agricultural development. The industry-agriculture interdependency and connectivity would encourage and speed up the process. They proceeded to wave them into a balanced model, known as the 'Ranis-Fei Model'. They managed to expand their model as key contributions to development economics, by highlighting the significant role of labor productivity, which set the backbone of industrial expansion. The connectivity between the two sectors was heightened, presenting the dependency of the capitalist sector on the non-capitalist sector -agriculture-.

Through their criticism that Lewis failed to present a satisfactory analysis of the agricultural sector, the increase in productivity of labor should take place prior to the labor transfer between the two sectors, however, this did not occur (Ghatak, 1995). This point has been taken seriously into consideration by Ranis and Fei. Besides, a notion of balanced growth criterion for the development economics within the dual structure was initiated. If agricultural technology is stagnant, any further transformation of labor from the agricultural sector could reduce total agricultural production, hence, new food prices will need an increase of industrial wage to offset the portion that reduced real wage. Since industrial expansion could be curbed as a result, at this point, some of the surplus must be used to increase agricultural productivity, or in other words, a type of balanced growth is necessary. Therefore, the question is to identify which proportion of this transformation would balance the level of development within both sectors. For example, the amount of released labor, due to the increase of agricultural productivity, should at least not exceeds the amount of job creation in the capitalist sector.

By introducing the concept of agricultural surplus, Ranis and Fei managed to step in the research of agricultural labor productivity and set up a dynamic mechanism. They regarded the accumulation of agricultural surplus induced by the improvement of agricultural productivity as the premise of surplus labor. They also claimed that transforming the continuous agricultural surplus into industrial capital is the driving force for economic development, as well as the continuing absorption of agricultural surplus labor.

On the one hand, the increase in agricultural productivity must be enough to enable a smaller proportion of the population to supply the economy with food and raw materials. In this way, this part of the “surplus labor” can be relocated to the growing industrial sector, where making a positive contribution to the total output. Even when the importance of the agricultural sector in the national account continues to decline, agricultural labor productivity can be still further improved, so that it can continue to produce “new” surplus labor unlimited and sponsor the Lewis’ developmental circulation. Vice versa, the real wage of the industrial sector will rise due to the disappearance of the infinite supply of labor or food shortages, and the expansion of the entire economy will be hindered.

On the other hand, when the marginal labor productivity of agriculture rises to the level of “institutional wage”, it means that the entire economy, including the allocation of labor, is fully commercialized. Once the agricultural sector is fully employed, the industrial sector has no way but to compete in the labor market by means of the expansion of its production through the transfer of agricultural labor. In other words, the semi “free of charge” model of Lewis’ industrial development ends. At this point, LDCs will face the same or similar developmental issue met by developed countries, in a competitive market with forces that yield the commonly accepted equilibrium conditions.

It is worth mentioning that their model intrinsically integrates the entire rural labor mobility and the industrialization cycle (initial, critical and commercialized stage) into a complementary and inseparable process. Statements on the rural labor market has been avoided explicitly, different from the mainstream segmentation theories in the urban labor market. In each stage of industrialization, the rural labor market manifested as: a disguised but visible unemployment; a disguised but invisible unemployment; and an open unemployment, respectively. Moreover, as a seminal theory, labor surplus economy is a nascent concept which can be derived from the Lewis-Ranis’ models. It can be a useful analyzing tool in development economics. On the one hand, taking full advantages of the “surplus” resources of labor as

the “First Pot of Gold”; and on the other hand, being well aware of the mechanism to produce this surplus, to (at least) initiate the process of industrialization, regardless of the external capital support.

However, statements on how to increase agricultural labor productivity in the absence of the initial capital/technology is missing. In other words, is it possible to improve labor productivity solely through changing the productive relations in agriculture? If so, unfortunately, this is missing from the argument. Other very realistic issues confronted by most of LDCs are the serious urban unemployment and the mistake of adopting a neoclassical methodology that is far from reality. For example, measuring the marginal product of labor in the agricultural sector to determine the existence of disguised unemployment seems very controversial, and also generated a large number of criticisms. Even Lewis in his later publications stated “[...] whether marginal productivity is zero or negligible is not however of fundamental importance to the analysis, and it was probably a mistake to mention marginal productivity at all, since this has merely led to an irrelevant and intemperate controversy [...]” (1972). In addition, foreign trade safeguarding food security and food prices, manifested their ignorance since their model is based on a closed economy. This can be observed in Japan’s process of economic dualism, as it imported cheap farm products to improve its terms of trade. It may be pointed out that the relaxation of a closed economy assumption will soften the balanced growth constraints (Ghatak, 1995).

Jorgenson’s Agricultural Surplus Model

Giving equal importance to agricultural development in the dual economy, Dale W. Jorgenson presented another neo-classical approach, which can be a complement to the Lewis-Ranis-Fei model, known as ‘agricultural surplus’ model. Jorgenson from a theoretical perspective tries to explain, not as a general discourse of linear development, why economic development is bound to accompany the expansion of the industrial sector and the shrinking of the agricultural sector. As such, he also makes further efforts to expose industry “infinite” and agriculture “finite” employability, and confirms that the employment of labor force will inevitably lead to inter- district transfer. Also, differing from other models, the Jorgenson model is not based on the existing labor surplus assumption, here, the existence or non-existence, as well as the production of the labor surplus are not crucial. He believes that Ranis and Fei’s claim on the increase in agricultural productivity as a reason for labor mobility is not as relevant as the inevitable changes in the consumption structure and demographic transformation.

On the one hand, labor mobility is rather a result of the shift of consumer demands, as people’s request for agricultural products is physiologically limited, while, the demand for industrial products is endless. Thus, once agricultural products meet the needs of the population, the development of agriculture will gradually lose its demand, and the rural labor force will turn to the industrial sector. On the other hand, the notion of the agricultural surplus is used to deepen his proposition on the demographic transformation in relation to labor mobility. But the mechanism of ‘agricultural surplus’ creation is different from Ranis and Fei’s theory.

To achieve agricultural surplus, the food output should be more than enough. Meaning that, if the per capita food output exceeds the minimum level of per capita output needed for a population to grow at its maximum rate, and the growth rate of agricultural production exceeds the rate of population growth

at its maximum level. Hence, a positive and growing agricultural surplus assures that the growth rate² of agricultural labor force will be less than that of the population. Accordingly, the ratio of the industrial labor force to agricultural labor force is always increasing, subsequently, ensuring migration to the industrial sector. Following this process³, the industrial sector expanded, and so did the employment. However, with the reverse process, the country will sink into the Leibenstein's 'low-level equilibrium trap'. This meaning that eventually manufacturing activity is brought to a halt, capital is allowed to depreciate without replacement, and the country will fail to become a modern industrialized country (Jorgenson, 1961). Therefore, the positive/negative agricultural surplus determines the development of the industrial sector, as well as the scale of rural surplus labor for migration. Subsequently, when a rural labor force is generated as surplus, it becomes possible to 'free' employment for the industrial sector.

The point of emphasizing on agricultural development is explained in two possible solutions: the improvement of rural income and the capitalization of the rural sector. As for the former one, it is because the rise in productivity per capita in industry is due to labor cost. The industry's labor supply curve rises, being equal to the average earnings per capita in the rural sector. Therefore, it is necessary to deepen the relationship between the supply function of labor for industry and income in the rural sector. In other words, by leading the agricultural development, industry benefits from the prosperity of rural livelihood. If farmers become richer, it grows the demand for non-agricultural goods and services (for production or personal consumption) which are most efficiently produced on an industrial basis. The prosperity of the agricultural sector will cause the industrial sector to expand as a consequence.

For the later point, Jorgensen claims that the duality of the two sectors - agriculture and industry- is reflected in the asymmetry of productive function and organizational form, in terms of different combinations of land, labor, technology and capital. In such a dual structure, it is recommended that the agricultural sector should introduce capital elements and the competitive market mechanism. The competition mechanism promotes the development of agriculture, and only when the agricultural surplus is greater than zero, it is possible to cause rural labor transfer.

It is worth to mention that Jorgensen introduced demographic and technological variables into the theory of the dual economy, although the proposition that growth rate of the population depends linearly on food output per capita, was denied through the historical evidence. However, it may exist at the initial development phase. In the long-term, if one takes the case of zero or negative population growth in some of the European countries, the theory does not have much accountability. It can hardly be verified the assumption that technological change keeps a more or less constant rate as it causes neutral changes. As Jorgenson explained, a technological change is neutral, provided that for a given bundle of factors the marginal rate of substitution between them with output held constant is the same before and after the change. For example, if technical progress can be accelerated by the accumulation of capital in agriculture, then the balance between food shortage and agricultural surplus may be tipped in favor of surplus.

² According to Jorgensen, the rate of growth of the agricultural labor force is equal to the difference between the rate of growth of total population and the rate of technological progress in agriculture divided by the share of labor in agriculture.

³ However, this process is based on another assumption that the rate of total agriculture output equals to the rate of population growth. That is to say, if there is no agricultural surplus, all labor remains on the land; if an agricultural surplus can be generated, a labor force available for employment in manufacturing grows at a rate which is equal to the rate of growth of the agricultural surplus.

Harris-Todaro's Expected Income Differential Model

In striking contrast to the sophisticated theories of unemployment in developed countries, there have been few attempts to a weighted theory for LDCs. Conventional economic models, with their singular dependence on full employment equilibrium -through appropriate wage and price adjustments-, cannot provide rational explanations for the sizable and growing levels of urban unemployment considering absolute labor surplus in the economy as a whole (Harris and Todaro, 1970). Despite the existence of the positive marginal product in agriculture and significant levels of urban unemployment in many LDCs, the rural-urban labor migration not only continues to exist but also appears to be accelerating (Harris and Todaro 1970). John. R. Harris and Michael. P. Todaro (1970) built up a dual model (a two-sector analysis) in development economics to explain issues concerning rural to urban migration in a context of high urban unemployment. They argued that labor migration from rural areas is based on a rational expectation equilibrium, which is determined by the urban expected income. Their model also acknowledges that there is no certain causation between urban unemployment and supply of rural labor force, subverting our traditional conceptions.

The model assumed that the individual migration decision is based on an expected income differential, rather than an absolute one between rural and urban areas. Specifically, when analyzing the determinants of labor supplies, one should not look at the prevailing income difference but rather at one's expectation and the possibility to obtain an urban job. Thus, at the initial stage, based on the assumption that wages are flexible and equal in both sectors, there is no condition for migration. However, together with an expected income, rural labor starts to migrate when wages in the urban sector increase. As long as rural labor perceives a positive chance of obtaining an urban job, rural-urban migration will continue. As migration persists, when the supply of labor is higher than the level that the labor market is able to clear, unemployment is induced. Then unemployment, in turn, starts to reduce the urban income, in comparison to the expected income. Finally, the equilibrium condition would be reached when the expected urban income is indifferent between two sectors, therefore, no further migration takes place.

Different from other theories, Harris-Todaro's model combined the characteristics of LDCs' real situations. The process of rural-urban migration was divided into two stages. The first stage occurs when the unskilled rural worker migrates to an urban area and initially spends a certain period of time in the so-called urban 'traditional' sector; while the second stage refers to the eventual attainment of a more permanent modern sector job. The recognition of the two-stage process of migration in the urban sector drew attention to the actual situation in LDCs, since it brought the theory of the critical segregation within the urban labor market. This has been significantly important to place labor mobility into the segmentation theory of the labor market.

In addition, the theory also gives positive recognition of rural development in the contribution to the reduction of urban unemployment. Todaro (1969) argues that the industrialization strategy, that is biased towards the modern industrial sector in accordance with the Lewis model, does not solve the developmental problem in developing countries. On the contrary, it is necessary to expand employment opportunities and encourage comprehensive development of rural areas in order to reduce the imbalance between urban and rural development, thereby alleviating the flow of rural population to cities.

As the logic depicted in their model, as long as the urban-rural real income differential continues to rise sufficiently fast to offset any sustained increase in the rate of job creation, the lure of higher permanent incomes will continue to attract a steady stream of rural migrants into the congested urban slums. The former even in spite of the long-run stabilizing effect of a lower possibility of successfully finding permanent employment. Therefore, the most significant policy implication emerging from the model is the great difficulty of substantially reducing the size of the traditional urban sector without a concentrated effort at making rural life more attractive. For example, pay attention to the development of small-scale rural industries, while strengthening a modest approach in rural development. A more serious caution given by the Harris-Todaro's model relies on the point of aggressive adoption of new technology in the agricultural development. For instance, the premature mechanization of agriculture through the adoption of the most modern techniques of large-scale farming poses serious problems for rural labor absorption (Todaro, 1969).

However, a perfect and competitive labor market assumption (if so) would be the biggest flaw of the Harris and Todaro's theory, especially for LDCs. Since the model completely recognized the effect and the role of the market economy, which assumed that labor market is fully clear. Therefore, it has to give full autonomy to all factors of the market. However, the labor market per se is yet mature in most developing countries. For example, there are a large number of informal jobs in the urban labor market. The official unemployment rate does not indicate the actual situation; while, rural labor is still subject to various discriminatory policies in the formal urban sector. Besides, the expected income differentials between urban and rural areas place the most critical factor in determining labor mobility for their model. Although the motivation for labor mobility has shifted from macro-neglect to micro-analysis, it is still too simplistic to be considered. This kind of expectation does not take into account the self-assessment of labor per se (including age, gender, skills, human capital, etc.), as well as considerations of migration and unemployment costs in searching for jobs. That is to say, when the urban unemployment emerges, the model does not take into account the urban living cost for those unemployed who are waiting among the society. Also, regarding the migration decision-making process, the model, in a sense, assumes that potential migrants are neutral to risk based on the same magnitude of expected rural and urban incomes. This reflection of economic realities becomes questionable; as potential migrants are likely risk-averse.

The above-mentioned theories provide constructive strategies of economic development for LDCs' early stage in various macro perspectives through the utilization of rural labor resource, and generation and transfer of labor surplus. Synthesizing the models of Harris and Todaro, Lewis, Ranis and Fei, and Jorgenson, the theory of rural labor mobility under the framework of a dual economy has become more comprehensive. This in terms of hypothesis of mobility motivations, mechanisms of labor surplus generation, labor mobility, strategies for capital accumulation, rural-urban development, as well as for industrialization. Although these theories have faced various criticisms and defects, they have occupied a very significant position in development economics and left a broad space for the continuing exploration.

These theories are superimposed to match the Marxist rationale on capital accumulation in a realistic approach for LDCs. Namely, Jorgenson through revealing changes in the consumption structure and transformation of the demographic structure inherited in industry and agriculture, as to produce the agricultural surplus; Ranis and Fei by elaborating the importance of agricultural labor productivity as to produce and squeeze out the labor surplus; Harris and Todaro by the expected income motivation

explains migration flow, and combined with Lewis' cost-free transfer of labor surplus as to harvest the First Pot of Gold for industrial development.

Theoretical Evaluations in the Dimension of Time, Space and People

Theories of labor mobility are too limitless to list. The old will be reviewed again, and the new will be explored soon. However, the essence never changes, it only manifests in different outward appearances, since people are still the same. The above theories are centered on the content/activity-based of labor mobility, so a context-based theory is missing (underlying the spatial-temporal context). Although there is a positive tendency of growing migration research, which consider interdisciplinary approaches and incorporate achievements of economics, sociology, demography, political sciences and history. This leads to a large diversification of research perspectives, methods and levels of analysis for the migration phenomena. However, something is still missing, since some theories may be valid and compatible in certain areas or in a certain period of time, but become invalid or incompatible even in the same period but different place, or same place but different time (Todaro, 1969). That is because, most theories focus on finding a single, even complex relationship between labor mobility and certain factors, without taking into consideration temporal, spatial, and human foundations, neither them as a whole. Therefore, even if much more complex models are adopted, it is still impossible to avoid falling into an epistemological one-sidedness.

Therefore, a fresh analytical methodology needs to be explored. Time, space and people consist of one of the epistemological frameworks of the archaic Chinese methodology (Zhong, 2012), targeting most forms of being/existence, including metaphysical concepts, values and theories. Based on such ontological angles, this framework offers a real reflection of existence, among other findings. In fact, each and every theory tries to explain a kind of existence, and any kind of existence has a certain time and space background. For example, Todaro in his development economics implicitly argues that there are various trends in economics, and even these trends tend to change greatly in different countries (place), cultures (people) and times (Todaro, 1969). Labor mobility, not different from any other human activity, is always under a certain time, space, and people/consciousness (as entanglements/interactions between time and space). However, most migration literature mentioned before, especially in the structuralist/development economic theories, solely focus on time or space or people, or take it as a static and absolute sense, thus, they block some potential perceptions of our understandings.

In the case of time, it is a often based on an absolute, constant, statically balanced, reversible, symmetrical, and non-evolving concept, which mostly derived from Newton's machinery mechanics. For space, it is almost always treated in an absolute, constant, static and physical sense, not only neglecting the functional approaches, but also evolving into a binary opposition epistemology (rural vs. urban, central vs. peripheral, hegemony vs. subordination, etc.). People is taken in the classical discourse as absolute homogenous, and in the neo-classical as heterogeneous factors. For this, many theories failed to explain the ongoing reality, because the real world is always in various movements which induce changes in time, space and people.

Time

The concept of time is the basic background for a certain system of thoughts in economics, restricting the explanatory boundary of the corresponding logic analysis. Ever since the classical economics, the time framework for each theory is not pure physical time but it is defined by economics.

Thus, establishing or selecting a compatible economic time is undoubtedly one of the core tasks in economics (C. H. Rong, 2016). Alfred Marshall pointed out in his *Principles of Economics* that time is at the heart of almost every major economic problem (S. J. Chen, 2006; Peng, Wang, and Shang, 2009). Time is not necessarily an objective phenomenon out of human beings, rather it needs to be perceived. Time can be a way of having human nature, which involves a process of continuous generation, creation and transcendence (S. J. Chen, 2006). Therefore, it is not even exaggerated to claim that many achievements of economic theory stem from the evolutionary understandings of the concept of time (C. H. Rong, 2016). This can be confirmed from a simple historical evolution of economic theories.

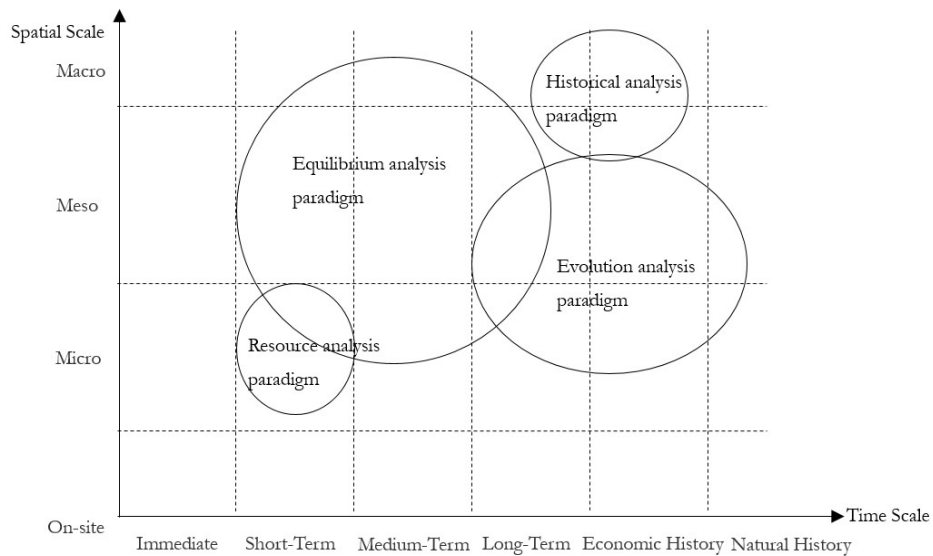
Einstein's Theory of Relativity made the modern concept of time theory break the time-view of classical mechanics represented by Newton (a static, even, absolute, reversible, symmetrical, quantifiable, non-quality, non-directional motion parameter) (S. J. Chen, 2006). However, Newton's view of time has had a major impact on the classical economics that emerged from the same period, and later on the neoclassical economic theories developed on this basis. Classical economics still includes historical time and time as a resource at some extent, but for neoclassical, the time sense is much shorter, even negligent in many cases. Claimed by many economists, the main time background of neoclassical economics is a static time-view derived from machinery mechanics (C. H. Rong, 2016). This can be clearly seen from their static equilibrium theory of the neoclassical school, since they still follow some assumptions of classical mechanics, including absolute time and space, as well as the instantaneous transmission of interactive objects. Since every instantaneous time is the same, there is no difference between the past and the future in dynamic changes, which makes the time in classical mechanics reversible, repeatable, and accumulative (C. H. Rong, 2016).

In the continuous exploration of economic theories, the assumption of the neoclassic time-view has been broken and further updated. In macroeconomics, Keynes' concept of time has risen to no longer be a dispensable variable, since his theory from the very beginning has focused on the expectations, decisions, and adjustment cycles of economic agents. This leads to the concept of time background of macroeconomics. Furthermore, with the institutional economics, as well as the evolutionary economic theories in the 1980s, especially Boulding's "Evolutionary Economics", and Nelson and Winter's "An Evolutionary Theory of Economic Change", marked the new generation of evolutionary time-view in economic thoughts (Boulding, 1983; Nelson, 2009; Winter, Nelson, and Hu, 1997), since they incorporated the time intersected by thermodynamics and the theory of evolution (C. H. Rong, 2016). The former one refers to the time-view of institutional change theory. The latter emphasizes the importance of time and history in institutional evolution (regard time as the vertical axis) and analysis, considering time as a historical process similar to that of biological evolution, and thus manifests irreversibly and heterogeneously.

In addition, the time-view in economic analysis can also be reviewed by Rong's applicable scales of various time paradigms in economic analysis (See Figure 3). In the perspective of time-view, economics

has experienced several paradigms, such as the historical analysis, the resource analysis, the equilibrium analysis and the evolution analysis paradigm (C. H. Rong, 2016). The time scale of economics is then divided into immediate, short-term, medium-term, long-term, economic history and natural history. Correspondingly, the spatial scale is divided into on-site, micro, meso and macro. However, for the study of labor mobility theory, any single time-view theory is not advocated in this thesis, rather, it should be more reference to the temporospatial range, which does not preclude to combine some appropriate theories. In this regard, Marx set an example. He did not only adopt the mechanic time-view in the micro field of economic phenomena, such as his rationale on the law of surplus value. He was also well aware of the relative time-view in the non-equilibrium nature of the macro level, such as discourse on the reserve army of labor. Moreover, his “Historical Materialism” takes the evolution of human society in an evolutionary time-view.

Figure 3: Applicable Scales of Time Paradigms in the Spatio-Temporal Diffusion



Source: C. H. Rong (2016).

Space

Different from time, the concept of space has been successfully incorporated into the research framework of mainstream economics. Still, it has made new breakthroughs in the development of the past 20 years. Spatial economics was developed on the basis of location theory which concern the geographic location of economic activity. Von Thünen (1826) with his monograph “The Isolated State in relation to Agriculture and Political Economy”, developed location theory in agriculture, which suggests that access to the market (town) can create a complete system of agricultural land use.

By the end of the 19th century and the beginning of the 20th century, research focus turned on location theory. This was explained by the development concentrated on locations of heavy and other industries, displacements caused by the construction of railway transportation system, as well as international trade growth. Amongst these works, it can be highlighted the industrial location theory of Wilhelm Launhardt,

theory of the location of industries of Alfred Weber, and the urban location theory by William Alonso (L. T. Chen, 2011).

However, traditional theories of location explicitly or implicitly assume that space is homogeneous together with the hypothesis of perfect competition and constant returns of scale. Thus, theories completely abstract its spatial factors, considering that all elements can flow instantaneously without cost (L. T. Chen, 2011). Because factors like labor and natural resources are not even among regions, and different natural endowments as the basis of inter-regional trade also involve the distance between different spaces, this distribution inevitably induces transportation costs in reality.

As such, since the 1950s, new insights (such as time-view) have been incorporated in the location theory. Edgar S. Dunn, Erich Ostrom, Walter Isard amongst others, further deepened the spatial economic sphere. Especially, Walter Isard's "Location and Space-economy", which combined geography with economics, could be marked as the nascent of modern spatial economics. Later on, more and more theories have continuously broadened the scope of research in spatial economics. In the 1990s, economists in the new economic geography have incorporated spatial factors into the theoretical system of mainstream economics and formed the spatial economic framework (L. T. Chen, 2011). Fujita, Krugman, and Venables with their representative work on "The Spatial Economy: Cities, Regions, and International Trade" (2001), together with Krugman's Core-periphery Model provide new dimensions and methodology in spatial economics.

Space view has been much incorporated and developed in economic theories. Its central concerns/debates brought more insights in the relevant studies of migratory theory, because it provides a new dimension to our understandings of the spatial context on labor mobility. For example, the historical transportation revolution to the impact of labor mobility. Transportation costs and returns to production and consumption would be two of the most critical debates in space economics. The CP model underlines its interlinkage between economies of scale and transportation costs to the agglomeration or dispersion of the spatial distribution of economic activities. Moreover, discussions on the specialized division of labor, clusters and networks, information communication, innovation and regional culture, state role, trade, production factors, and competitive situation, etc., in the spatial discourse, build up a more comprehensive and systematic spatial equilibrium model than the traditional location theory (L. T. Chen, 2011).

The concept of space, does not only consist of spatial location (geographic space), but also the characteristic space (functional space, abstract space), although for centuries only geographic space has been a factor in economic models, like economic, political, ideological, structuralist, even analytical space (as presented above: micro, meso, and macro space). Compared to geographic space, such as the national territory, the characteristic space is even overarching, which derives from, and it is not limited to, the global south-north, developing-developed world, ethnos, culture, social institution, economic system, political regime, so on and so forth. Referring to theories of labor mobility, it contains two layers of implications. The first layer (more geographic space) refers to the spatial basis of theoretical applicability. Namely, which place suits the selected theory (of labor mobility): Is it the developed or developing countries (economies)? The second layer (more characteristic/functional space) refers to the spatial carrier of theories (of labor mobility). Such as rural-urban areas, economic departments (agriculture,

industry, and service), regions (poor, rich), geopolitics (center, periphery), etc. More often, both layers are overlapping one another.

Throughout most migration literature, space view is still in the classic discourse based on location theory, and in the geographic space treated as absolute, static, and constant. They might be valid in a physical sense, but not in the functional sense. Even worse, as space view is neglected, many authors demonstrated great confusion in adopting the relevant theories. Apart from this, both geographic and function spaces per se are convertible and interactive. For example, the mobility transition could convert the geographic space into the functional space of migrants, in the help of the transportation technology, which made the functional space more relevant to the geographic space (Zelinsky, 1971). Besides, time and space are never separated. The complexity of their combination varies from one to another and varies with the overall and partial structural changes. As Todaro (1969) claimed, many development economists would agree that traditional or Western classical economic theories have limited relevance in their understandings of the characteristics of many third-world economies. For example Krugman believes that the CP model is applicable to explain real manufacturing industry of the United States in the 19th century, but currently, it suits the Chinese case more than that of the USA (Krugman, 2011). The new economy of geography underlines that the manufacturing situation of the developed countries in the past manifested many similarities with many of today's emerging economies (Liang and Huang, 2012).

By taking into account the research framework of spatiotemporal science, Zelinsky (1971) combined labor mobility studies with the process of modernization, and initiated the hypothesis of the mobility transition. There are definite, patterned regularities in the growth of personal mobility through space-time during recent history, and these regularities comprise an essential component of the modernization process. For time, there are different forms of mobility suggested, which appeared to vary considerably through time in their relative volumes and rates. The progression of five phases of spatial mobility is indicated for an ideal nation, in which the potential migrant enjoys a full range of options (Zelinsky, 1971). In the case of time, 'circulation' has been adopted to refer to the territorial mobility, which denotes a great variety of movements, usually short-term, repetitive, or cyclical in nature, but all having in common the lack of any declared intention of a permanent or long-lasting change in residence. This is exactly what we see in most neoclassic models of labor migration, namely, many of them deem that labor mobility is complete in one step, taking for granted that labor mobility is migration.

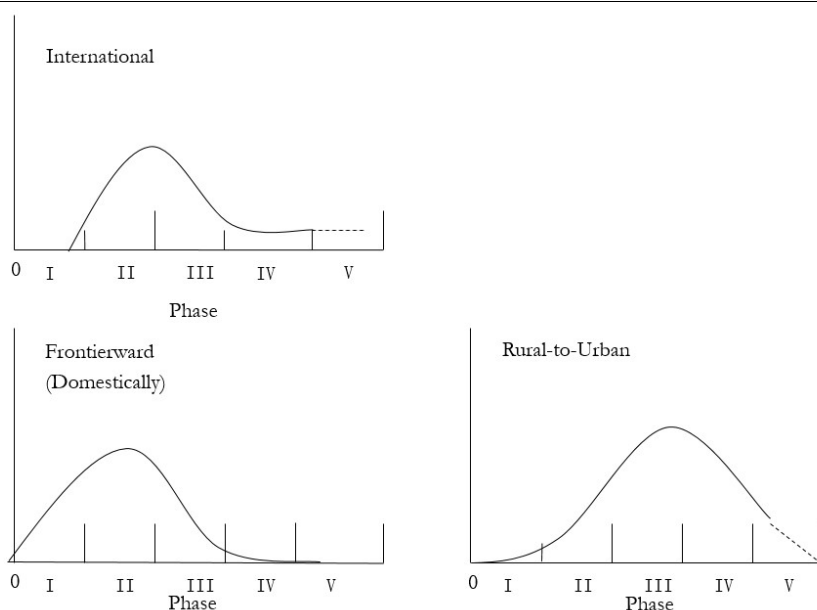
Curves show in Figure 4 largely chronicle the rural exodus among developing societies. The five-stage vital transition is in review of situation of fertility and mortality and each stage of the mobility transition has demonstrated a different feature of rural mobility:

- the pre-modern traditional society (with little genuine residential migration);
- the early transitional society (with massive rural-to-urban migration);
- the late transitional society (with still major migration);
- the advanced society (with leveled off residential migration but reduced in absolute and relative terms, combined with city-to-city migration); and,
- the future super-advanced society (with all in declined feature but a stable interurban circulation).

A distinctive feature of Phase IV should be highlighted since it is the emergence of noneconomic motivations for both migrant and circulator; and if Phase V should ever arrive, it seems likely that noneconomic considerations will loom even larger (Zelinsky, 1971). Apart from its positivist rationale,

since not all the society/community would pass each phase orderly (even some are upside down or overlapped), the fusion of the spatial with temporal perspective is well incorporated in the area of labor mobility and demonstrated its dynamics. Indeed, it is surprising how little progress has been made in this hypothesis to treat the mobility transition as a process diffusing outward through space and time, and offered such insightful method in dealing with the dynamics of possible attributions at the several stages and society.

Figure 4. Changing Levels of Various Forms of Mobility Transition



Source: Zelinsky (1971).

People

No matter in a temporal or spatial context, any economic activity is undertaken by people. The measurement of time and space in economic motivation/activity/phenomenon needs to perceive by people. Thus, at presentation level, the decisions made by people are subsequently different in contexts such as varied generation, or one person in his/her different stage of life, or family/community/region/country/world. While, at a deeper level, people decision making would also depend on different sense of experience, consciousness, cognition, value, orientation, belief, ideology, epistemology, as well as in collective forms such as history, culture, relations, politics, customs, morality, which are all results of the entanglement between space and time, then embedded on people.

In fact, time and space are fundamental tools of a human being to cognize the objects/world (or to interpret the existence), and present their understandings by the state and process. Due to the fact that objects are all in relative movement, people manage to summarize and generalize the phenomenon of time and space as to interpret the world. Their attributes are derived, namely the length, sequence, cycle of time; together with the size and height of space, as well as the speed and direction of the objects. Moreover, time and space are inseparable in the process of people's cognition of the object. People, through the instrumentality of the dynamics of time and space to understand the complexities of each

object rely on their mutual entanglements (relations and references of time and space). In other words, to understand time, a spatial background is needed, and vice versa.

As people's cognition continues to deepen, objects from the visual layer to the non-visual level (like history, culture, value, etc.) are incorporated. Simplistic space-time framework is enough to explain the complexity of the world and must be understood by means of the dynamics. These dynamics can also be understood as internalizing time and space into a subjective level of thoughts. Also, the consciousness of people here is not only at the individual level, but also at the collective one, such as the national/ethical consciousness, and including the consciousness in the context of the entire political and social environment.

Therefore, people in the context of time and space have a special meaning. They are not only individual *homo economicus*, but also contain attributes like family, collectiveness, society, ethics, nationality, world, and ecology. In other words, people are no longer just those who are complete egoist under the "Wealth of Nations", rather, they could be altruist under "The Theory of Moral Sentiments" which have been ignored for long. Thus, people actually referred by Adam Smith are under a specific social environment (measured by time and space, and their entanglements), which bears strong social nature with certain ethics and preferences. Such an interpretation is also absolutely identical with the definition of people in theories such as humanist economics, welfare economics and social economics. For example, in social economics, people as social individuals are embedded in a web of constitutive social relations (value people and evaluate institutions as to their responsiveness to people) (Lutz, 2002). This deal with issues like the protection of a person's rights, including property rights, the redistribution of income and wealth, the regulation of wages, land use and the social consequences of free-flowing capital, so on and so forth.

People, while subject to the external environment, at the same time, have subjective initiative and creative power, which in turn reshape the internal and external condition/circumstance. In the view of the social rule system theory, human organized groups (human actors/agents), including communities, families, enterprises, governments, institutions, parliaments, political parties, international organizations/societies, etc., are the creators, and at the same time the carriers of the social rules system (Burns, 2000). In addition, the social structure of the population (including birth rate, mortality rate, dependency ratio, the proportion of the working-age population, etc.) also determines the bases of external environment such as economic structure/consumption and production structure of a country, thus creating a reaction to the external and internal conditions. The fusion of the spatial with temporal perspective has treated the demographic transition as a process diffusing outward through space and time. As concluded by Zelinsky (1971) in "The Hypothesis of the Mobility Transition", for any specific community, the course of the mobility transition closely parallels that of the demographic transition.

Finally, since the labor-power is attached to people, the mobility of labor-power as a productive factor should not be deemed ordinary like capital and land. Laborers are living people, thus, people's behavior and decisions cannot be easily analyzed using economic assumptions and principles regardless of changes of external contexts (X. F. Sun, 2012). Even more complicated, as Hanson concluded, the determinants of migration willingness and migration behavior are not the same (Hanson, 2009). A hybrid framework which contains the above considerations is needed to understand the complexity of people and their world.

Summary

Most theories have been reviewed/criticized under this dynamic paradigm as entangled among time, space and people, which has been exclusively designed thereof. By doing so, labor mobility is thus not claimed as a simple economic phenomenon or a pure economic behavior, which must be reviewed under this dynamic constellation. This is reflected in the new structuralist epistemology that combines both the content-based and context-based factors/attributes/conditions in interpreting labor mobility in an overarching perspective. Labor mobility, not different from any other human activity, is always under a certain time, space, and people/consciousness. Thus, the dynamic paradigm can be used as an analytical tool, reviewing context-based and content-based applicability and compatibility of theories in labor mobility, also putting forward a more appropriate frame of reference in guiding empirical research. By analyzing one complete time cycle, combined with a certain space and people as the background of its logical deduction, on the one hand, it can be used as a frame of reference for theoretical selection and basis for theoretical evaluation; and on the other hand, it can also be used to explain and compare the background of the real world.

To conclude, most economic theorists, unlike sociologists, have had a long tradition to claim a general model, and then add up time, place, and cultural background as foundations for their hypotheses (Todaro, 1969). These foundations can be understood as the applicability and compatibility of theory, which could not be involve with limitations of the dynamics as entangled among time, space and people (“dynamic paradigm”). That is to say, when theoretical hypotheses are formulated to adapt to a particular situation in the Western world, their theories have included the assumptions of social reality inherent in the Western world. Thus, using these theories for studying underdeveloped countries is certainly inappropriate (Todaro, 1969). For example, one of the hypotheses of Lewis is based on the assumption of full employment at the urban sector, namely, as long as the surplus labor mobilize, they will be employed automatically in the urban labor market. This discourse had been frame, by Lewis, in the classical world. Self-evidently, it might be the case in the early stage of industrialized countries, but definitely not for most of today’s LDCs.

Reference

- Allen, R. C. (2000). Economic structure and agricultural productivity in Europe, 1300–1800. *European Review of Economic History*, 4(1), 1–25. <https://www.jstor.org/stable/41377861>
- Bairoch, P. (1979). *Economic development in the Third World since 1900*. Routledge: London.
- Boulding, K. E. (1983). *Evolutionary economics*. Sage: New York.
- Breman, J. (2016). *At work in the informal economy of India: A perspective from the bottom up (OIP)*. Oxford University Press: Oxford.
- Burns, T. R. (2000). *Structuralist Perspective: Economic and Social Changes*.
- Cai, F., Du, Y., and Wang, M. Y. (2003). *Political Economy of Labor Mobility*. Shanghai People's Publishing House: Shanghai.
- Carrington, M. W., and Detragiache, M. E. (1998). How big is the brain drain? IMF Working Paper 98-102. IMF: Washington D.C.
- Chen, L. T. (2011). The Dynamic Analysis of Space Economics Development. *Economic Journal of Hubei University*, 9(1). http://en.cnki.com.cn/Article_en/CJFDTOTAL-HBSG201101014.htm
- Chen, S. J. (2006). The Evolution of Time Concepts and their Impact on the Development of Economics. *Journal Economist*, 3(3), 21–28.
- Chen, X. H. (1990). *An Overview of Modern International Economy: Since the 16th Century*.
- Cipolla, C. M., and Huang, Z. H. (1993). *World Population and Economic History*. Beijing Business Press.
- Clapham, J. H. (1966). *The economic development of France and Germany, 1815-1914*. HardPress Publishing: Los Angeles.
- Clark, C. (1951). *The conditions of economic progress*. MacMillan and Co Limited: London.
- Davis, M. (2004). Planet of slums. *New Left Review*, 26, 5.
- Demeny, P., and McNicoll, G. (2006). World population 1950-2000: Perception and response. *Population and Development Review*, 32, 1–51. <https://www.jstor.org/stable/20058943>
- Engels, F. (2005). The condition of the working class in England, 22–27. Otto Wigand: Leipzig.
- Fisher, A. G. (1945). *Economic progress and social security*. Macmillan and Co. Ltd: London.
- Fujita, M., Krugman, P. R., and Venables, A. J. (2001). *The spatial economy: Cities, regions, and international trade*. MIT Press: Cambridge.
- Ghatak, S. (1995). *Introduction to development economics*. Routledge: London.
- Habitat, U. N. (2007). Slum dwellers to double by 2030: Millennium development goals could fall short. *21st Session of the Governing Council of UN-Habitat*, [Http://www.Preventionweb.Net/Files/1713_463146759GC202120Slumdwellerstodouble.Pdf](http://www.Preventionweb.Net/Files/1713_463146759GC202120Slumdwellerstodouble.Pdf).
- Hanson, G. H. (2009). The economic consequences of the international migration of labor. *Annu. Rev. Econ.*, 1(1), 179–208. DOI: 10.3386/w14490
- Harris, J. and Todaro, M. (1970). Migration, Unemployment and Development: A Two-Sector Analysis. *The American Economic Review*. 60(1), 126-142. <https://www.jstor.org/stable/1807860>
- Jiang, L. L. (2008). Study on Urbanization in the German Industrial Revolution.
- Jiang, W. (2007). Rural Labor Mobility in the Process of German Industrialization: Mechanism, Characteristics, Problems and References. *European Studies*, 25(1), 101–114.
- Jorgenson, D. (1961). The Development of a Dual Economy. *The Economic Journal* 71(282). p. 309-334.
- Jorgenson, D. (1998). *Growth: Econometric General Equilibrium Modeling*. MIT Press: Cambridge.
- Kitching, G. (2010). *Seeking social justice through globalization: Escaping a nationalist perspective*. Penn State University Press: Philadelphia.

- Krugman, P. (2011). The new economic geography, now middle-aged. *Regional Studies*, 45(1), 1–7. DOI: 10.1080/00343404.2011.537127
- Lewis, W. A. (1954). Economic development with unlimited supplies of labor. *The Manchester School*, 22(2), 139–191. DOI: 10.1111/j.1467-9957.1954.tb00021.x
- Lewis, W. A. (1955). *The Theory of Economic Growth*. London: Allen and Unwin.
- Lewis, W. A. (1972). Reflections on unlimited labor, *International Economics and Development* 75–96. DOI: 10.1016/B978-0-12-216450-7.50017-7
- Li, C. (2017). Changing Relations of Production of Agriculture in China under Globalization. In A. M. Buainain, M. R. de Sousa, and Z. Navarro (Eds.), *Globalization and Agriculture Redefining Unequal Development* (pp. 107–125). Lexington Books: Maryland.
- Li, J. X. (2000). Characteristics of "compressed" environmental problems in China's rapid economic development. *Journal of Social Sciences*, 4, 50–54.
- Liang, Q., and Huang, Z. (2012). Spatial Economics in China. *Economics (Quarterly)*, 4, 61–66.
- Lutz, M. A. (2002). *Economics for the Common Good: Two Centuries of Economic Thought in the Humanist Tradition*. Routledge: London
- Marx, K. (1867). *The Capital, a Critique of Political Economy*. Verlag von Otto Meisner: Hamburg. Doi: 10.3931/e-rara-25773
- Nelson, R. R. (2009). *An evolutionary theory of economic change*. Belknap Press: Cambridge.
- Peng, Y. L., Wang, W. H., and Shang, J. Y. (2009). *Principles of Economics*.
- Ranis, G. (1988). Analytics of development: Dualism. *Handbook of Development Economics*, Hollis Chenery and T.N. Srinivasan (Eds.) 1, 73–92. DOI: 10.1016/S1573-4471(88)01007-1
- Ranis, G. (2004). Labor surplus economies. *The New Palgrave–Economic Development*, 191–198. DOI: 10.1057/978-1-349-95121-5_1044-1
- Rong, C. H. (2016). The Concept of Time and the Framework of Time-spatial Analysis in Economics. *Journal of Beijing Jiaotong University (Social Science Edition)*, 15(03), 1.
- Rong, D. X., and Sima, J. (1989). *Research on Agricultural Labor Transfer in Various Countries*. Economic Daily Press.
- Scherrer, C., & Verma, S. (2018). *Decent Work Deficits in Southern Agriculture: Measurements, Drivers and Strategies*. ICDD Rainer Hampp Verlag: Munich.
- Sun, X. F. (2012). Thought Changes and Path Exploration of Labor Migration Theory. *China's population resources and environment*, 22(11), 89–94. http://en.cnki.com.cn/Article_en/CJFDTot-ZGRZ201211013.htm
- Tanner, A. (2005). Brain drain and beyond: returns and remittances of highly skilled migrants. *Global Migration Perspectives*, 24(1), 1–13. <https://www.refworld.org/docid/42ce4ff74.html>
- Todaro, M. P. (1969). *Economic Development in the Third World*, New York: Longman Inc.
- Von Thünen, J. (1826). *The Isolated State in Relation to Agriculture and Political Economy*. Palgrave: New York.
- Wang, Y. M. (1995). *Population and Modernization in Historical Perspective*.
- Wang, Z. H., and Huang, K. K. (1999). European and American Rural Labor Migration and Urbanization. *Social Sciences Academic Press*, 4.
- Wang, Z. H., Sun, X., and Tao, H. F. (1995). The rise of industrial society. *A Comparative Study of the Industrial Revolutions in Five European Countries*, 88–90.
- Winter, S. G., Nelson, R. R., and Hu, S. K. (1997). *Evolutionary theory of economic change*. Belknap Press: Cambridge.
- World Bank. (1984) *World Development Report*. World Bank: Washington D.C.

Xiao, H. Y. (1997). Urbanization, Population Movement and Economic Development in Germany. *World History Press*, 5, 62–72.

Zelinsky, W. (1971). The hypothesis of the mobility transition. *Geographical Review*, 219–249. DOI. 10.2307/213996

Zhang, Q. (2016). *The Supply of Social Policy on Rural Labor Migration: International Experience and Domestic Practice*. Economic Science Press: Beijing.

Zhong, Y. S. (2012). *Chinese Classic Economics*. Paths International Ltd: Reading.

Zorn, W. (1971). *Handbuch der deutschen Wirtschafts-und Sozialgeschichte, 1*. Klett-Cotta /J. G. Cotta'sche Buchhandlung Nachfolger: Stuttgart.



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