Bringing Production and Employment Back into Development: Alice Amsden's Legacy for a New Developmentalist Agenda

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Abstract

Building on Alice Amsden's legacy, the article criticises the currently dominant view of development for its neglect of production and employment. To remedy its shortcomings, the article introduces a new theoretical synthesis that sees development as a process of production transformation, led by the expansion of collective capabilities and resulting in the creation of good quality jobs and sustainable structural change. Within this New Developmentalist framework**,** the article highlights the policy challenges, the opportunities and the trade-offs associated with reconciling industrialisation, generation of good quality jobs, and environmental sustainability, as emerging from the post-2015 SDGs.

Keywords

New Developmentalism; Production transformation; Collective Capabilities; Structural heterogeneity; Good employment; Sustainable Development Goals.

JEL: O10; 014; 015; D20.

Introduction

As revealed during the debate on the formulation of the Sustainable Development Goals (SDGs), a challenge is emerging against the currently dominant view of development, which focuses on poverty reduction and individual empowerment, while leaving economic growth largely to the market. A number of scholars have denounced this view, reflected especially in the Millennium Development Goals (MDGs), for its neglect of structural change, inequality, and employment (Gore, 2010; Khan and Christiansen, 2011; Chang, 2011). Especially in the last years of her life, Alice Amsden was at the forefront of this challenge, showing how employment creation and improvement in job quality via learning-based industrialisation is the only pathway to truly inclusive and sustainable development (Amsden 2010, 2012).

The present article tries to develop an alternative to the current development orthodoxy by building on Alice Amsden's seminal work. In Section 2, we critically examine the currently dominant view of development, based on Neoclassical economic theory while incorporating elements of Amartya Sen's Capability Approach. In section 3, we present the main building blocks for a New Developmentalist perspective. Development is conceptualised as a process of production transformation, led by the expansion of collective capabilities and resulting in the creation of good quality jobs and sustainable structural change. In Section 4, based on this New Developmentalist vision**,** we propose a more holistic view of sustainable development that can reconcile the social, economic and environmental dimensions.

Why and how has the dominant development discourse come to neglect production and jobs and why that matters

Over the last century, the development discourse has produced two main views. In the aftermath of World War II and the de-colonisation process, we saw the ascendancy of classical development theories (Prebisch, 1950; Lewis, 1954; Myrdal, 1957; Hirschman, 1958), in which development was almost synonymous with industrialisation and structural transformation. They focused on the need for high capital accumulation and the transformation of productive structure through economic planning, conceptualised in terms of aggregate variables, like savings, investments, and surplus labour. The developmental state and the large industrial companies operating in oligopolistic markets were seen as the main entrepreneurial agents behind such transformation. In applying these theories, individuals were forgotten and, worse, repressed in the name of a greater good called economic development.

From the 1970s, classical development economics came under severe challenge, first from resurgent Neoclassical economics and then from the 'humanist' approaches, represented by Sen's capability approach. Today, a combination of these two approaches form the dominant view of development. In this section, we offer a critical appraisal of this view, in order to lay the groundwork for an alternative perspective we offer in the next section.

Standard Neoclassical economics and its limitations

Amsden (1997, p. 469) pointed out that classical development theories were "firmly and fundamentally rooted in production" and emphasised the central role that "innovative divisions of labor, constrained by market size" play in development. While acknowledging "flirtations with production-related issues" of some mainstream theories, Amsden (1997, p. 470) accused Neoclassical economists of having increasingly interpreted markets "exclusively in terms of exchange rather than production, as in

the new institutionalism, according to which growth is retarded by high transaction costs (why not high production costs?); or international trade studies which emphasise the importance of relative exchange prices between domestic and foreign sales, ignoring how a capacity to produce tradables for sale in any market arises".

The neglect of production denounced by Amsden is not incidental. It is due to the core premises of Neoclassical economics. The most relevant ones are: (i) the fixation with market exchange and the corresponding 'black box' view of production; (ii) the limited understanding of technological and organisational learning in production; (iii) the production homogeneity assumption (namely, the assumption that all production activities are alike); (iv) the atomistic society assumption; and, finally (v) the pro-consumer bias.

First, Neoclassical economics has traditionally assigned prominence to the phenomenon of exchange between rational individuals in the market and the related problem of allocative efficiency of scarce resources (Simon, 1991; Pasinetti, 2007). Given this, it has no real theory of production. Even in the so-called theory of production, production is conceptualised as isomorphic to consumption within a framework of rational choice and competitive equilibrium (Loasby, 1999). Production functions represent a set of efficient techniques, defined as combinations of factor inputs that produce the maximum amount of outputs. These functions are used both at the micro level (to derive the cost functions of a firm) and the macro level (to determine factor income shares and relative contributions to economic growth). Despite the fact that "for no other branch of economics is the concept of *process* as essential as for the economics of production" (Georgescu-Roegen, 1970, p. 2), Neoclassical theory has maintained a 'black box' view of production, in which organisational

dynamics and technological learning over time are ignored (Rosenberg, 1982 and 1994; Nelson and Winter, 1982; Andreoni and Scazzieri, 2013; Andreoni, 2014).

Second, Neoclassical economics has a limited understanding of technological and organisational learning in production. While concepts like 'learning by doing', 'technical change' and 'human capital' have been gradually introduced, they are theorised in rather simplistic ways. For example, the concept of learning by doing (Arrow, 1962) may capture the Smithian idea that worker productivity increases with production experiences, but it does so in a dis-embedded way, that is, with no reference to the structure and the process of production and only in terms of the sheer length of time spent in the execution of tasks. For another example, in the so-called human capital theory, human capital is conceptualised as a homogenous input, despite the fact that real-life production happens in firms that use different combination of "appropriate knowledge, experience and skills", rather than undifferentiated knowledge (Richardson 1972). Moreover, Neoclassical theory sees human capital as something that is accumulated outside the production process as a result of formal education, when often more important is the accumulation of capabilities through learning in production (Best, 1990; Lazonick, 1990; Andreoni, 2014).

Third, Neoclassical economics vastly under-estimates the heterogeneity of production activities *within* and *across* production sectors. Not only does it ignore the issue of "what" (i.e., the product) you produce "how" (i.e., technologies and organisations used), it does not consider the question of "where" the production is conducted: "The general assumption is that production functions are everywhere identical so that the most labor-intensive commodities are indisputably the comparative advantage of the lowest-wage producers", which in reality is not the case (Amsden, 1991, p. 283).

Fourth, Neoclassical economics has a poor understanding of the "who" aspect of production (Richardson, 1972; Lazonick, 2010). The framing of the economy as a series of transactions between individuals prevents it from understanding the collective nature of production. As highlighted by Herbert Simon (1991, p.25), "as soon as firms are elaborated to become more than simple nodes in a network of transactions, to be producers—transformers of factors into products—difficult and important questions arise for the theory. A large part of the behavior of the system now takes place inside the skins of firms, and does not consist just of market exchanges".

Fifth, Neoclassical economics has traditionally conceptualised individuals as insatiable consumers**,** continuously seeking to maximise utility by gaining more goods and services. Work is seen as purely instrumental in securing consumption and a form of disutility in that it is painful and limits individual's leisure time (Chang, 2014; Spencer, 2015). Within this framework, economic growth is seen as the main vehicle for increasing individual income, which expands consumption and thus enhances human well-being. Consequently, poverty is mainly understood (and measured) as a form of consumption deprivation.

Beyond or Within Neoclassical Economics?: Modifications to standard Neoclassical economics and their limits

Neoclassical economics has experienced some modifications in the last few decades. Starting from the mid-1970s, it has started to recognise the problems associated with asymmetric information (Akerlof, 1970; Spence, 1973; Greenwald and Stiglitz, 1986; Stiglitz and Greenwald, 2013). From the 1980s, Neoclassical economists working in the tradition of New Institutional Economics (NIE) have developed an explanation of the existence of the firm, using the concept of

transaction costs (Williamson, 1981; North, 1990).

Important they may have been, these advancements are still within the Neoclassical paradigm. The focuses of information economics remain to be resource allocation, market exchange, and consumption. Even the NIE theory of the firm, which inevitably pays more attention to the issue of production, does not amount to a full theory of production in that it neglects the collective and political processes in which resource are continuously developed and organised in production within and between firms.

In parallel, the development discourse witnessed the emergence of humanistic perspectives from the 1970s, starting with the 'basic needs' approach (Streeten, 1979) and the view that 'small is beautiful', that is, the view that development programme should be bottom-up and focused on micro and capillary interventions (Schumacher, 1973). The humanist approach was boosted by the emergence of Sen's Capability Approach (CA) in the 1980s, which gained influence in the 1990s (Sen, 1985, 1999). The CA challenged the standard Neoclassical view of welfare based on utility-based measures and its reductionist way of thinking about utility as the result of income or commodity endowments. The CA proposed a view of development as expansion of freedoms, or valued 'beings and doings'. As later pointed out by Sen (1997), in contrast to the BLAST ('blood, sweat and tears') view of development of classical development economists[i], the CA advanced the GALA – 'getting by with a little assistance' – view of development, giving justifications for what Amsden (2012, p. 114) later called "grass roots poverty alleviation measures".

Even while it criticises Neoclassical economics for its exclusive focus on material consumption, the CA shares some fundamental outlooks with it. First, it is an individualist approach, like Neoclassical economics, and thus neglects the collective dimensions of the economy (Gore, 1997;

Evans, 2002; Jackson, 2005). In criticising Sen for being still a 'good Manchester liberal', Evans (2002, p. 56) draws attention to the fact that "my ability to choose the life I have reason to value often hangs on the possibility of my acting together with others who have reason to value similar things" and concludes that "individual capabilities depend on collective capabilities". Second, the CA shares with Neoclassical economics a consumption-based view of human welfare as it focuses more on the use of resources than on their creation, even though it defines consumption more broadly. This makes it neglect the role of production in the economy and the possibility of conceptualising individuals as producers. Third, these two characteristics, when combined, make the CA neglect the issue of collective productive capabilities (what Amsden defined as 'social construction of competitive assets'; see below), and underestimate the importance of changing a country's productive structure as the most fundamental dimension of development.

The result has been an unintended and usually unacknowledged alliance between Neoclassical economics and the CA approach since the 1990s. Development and poverty reduction have become synonymous and the critical role of productive transformation has been neglected. This has also led to the neglect of full and productive employment as a critical dimension of development (this goal was recognised within the MDGs only in 2007; van der Hoeven, 2014). Moreover, the individualist bias of the dominant approach has meant that primary education, health and empowerment have occupied the centre stage in development discourse, as reflected in the MDGs, while individualist poverty reduction schemes, such as microfinance or conditional cash transfers, have been promoted as 'development' policies (Amsden, 2009, 2010, 2012; Chang, 2011).

Real world consequences

The neglect of production and employment by Neoclassical economics is not just an academic problem. It has had pervasive negative effects on real world development policies.

First, as Amsden (1997, p. 470) highlighted, given its focus on markets and its neglect of production, Neoclassical economics sees development as "an unqualified process of reducing market failures". However, she argues, "in terms of production, it is a process of building and buttressing [market failures]" in the sense that many market failures are the manifestations of a dynamic transformation in the sphere of production, which is at the source of economic development. For example, monopolies are often the results of innovation, but if we see them as a market failure to be 'corrected', as in Neoclassical economics, we are likely to implement policies that dampen the dynamism of the economy. Indeed, developing countries have been increasingly urged to implement American-style competition policy, which does not discriminate between monopolies that come from innovation and those that come from predatory behaviour (Amsden and Singh, 1994).

Second, the Neoclassical view of production as a simple process of combining non-specialised factors of production according to fully known and easily transferrable formulae has had important impacts on both trade and industrial policies. As productive capabilities are assumed to be the same in all countries, there is no justification for infant industry protection, which creates the space within which developing country producers with lower productive capabilities can invest in raising their capabilities (Lin and Chang, 2009). Moreover, the failure to recognise the specialised nature of factor inputs across industries has given credence to the currently popular – but mistaken – view

that industrial policy, even if it is used, should be 'horizontal' – that is, it should concentrate on increasing the supply of production factors that all industries use, rather than provide selective supports for particular industries, firms, or technologies (Andreoni, 2016).

Third, the Neoclassical assumption of production homogeneity has also supported the view that what countries produce does not matter; "It doesn't matter whether you produce potato chips or micro-chips", to borrow a famous expression from the 1980s industrial policy debate in the US[ii]. This has, in turn, made a lot of developing countries complacent about their dependence on primary commodities, cheap assembly, or low-grade services. However, in the long run, different economic activities give different scope for growth and technological development, so even from a purely growth-oriented point of view, the assumption of production homogeneity has negative policy implications.

Fourth, the Neoclassical neglect of the collective dimensions of productive capabilities has led to the atrophy of many institutions that are important in developing productive capabilities: capital-labour collaboration within firms; cooperation among firms within and across sectors; government-business interactions, including, but not just, industrial policy; partnership between industry, public technology intermediaries, and the academia (Amsden, 1989, 2001; Pisano and Shih, 2009; Berger, 2013; Andreoni, 2016; Andreoni, et al. 2017).

Fifth, the neglect of production has created a pro-consumer bias in policy assessment. Neoclassical economics conceptualizes human beings mainly as individualistic consumers, rather than workers that are parts of social division of labour and in whose life work is not just a source of disutility but also sources of identity, self-respect, self-realisation, and solidarity. The resulting policy package has been what Amsden called the 'grassroots' methods of

poverty alleviation, relying on enhancement of individual capabilities and the encouragement of their utilization through measures like micro-credit and cash transfers (Amsden, 2012). In her last contributions, Amsden (2009, 2010, 2012) criticized this view for being a version of Say's Law, which mistakenly believes that, when we improve the capabilities of job seekers, new jobs requiring higher capabilities will be created in response and production will be smoothly transformed.

Towards a New Developmentalist Framework:Production Transformation and the Creation of Good Jobs

In this section, we introduce a theoretical framework in which development is re-conceptualised as a process of production transformation, which is essential for creating good employment. In doing so, we are not trying to go back to the older aggregate approach solely focused on resource mobilization and labour absorption but combining those old insights with the more recent theoretical developments on industrialisation via learning, shop-floor-level micro-efficiency, and what Amsden called 'social construction of competitive assets'.

Production transformation: The constitutive role of production and the "social constructions of competitive assets"

Human capabilities and production capabilities are hardly separable. This does not mean that they are one and the same. There are a number of valued 'beings' and 'doings', as described in the Sen's CA, that are not immediately related to production (Sen, 1999). However, production activities take an extraordinarily large part of human beings' life. Those capabilities (and freedoms) that human beings develop (or fail to develop) in production are integral parts of human capabilities expansion.

Production capabilities are defined here as personal and collective knowledge that are

needed for the execution of production tasks and for the improvements in technological and organisational functions of production units (Penrose, 1959; Richardson, 1972; Amsden, 1997; Andreoni, 2014). While education and off-the-job training play important roles in their developments, these capabilities mainly develop through processes of learning in production within firms. Moreover, it is within the realm of production that human beings develop their identity as producers. This is also the reason why Classical Political Economists were extremely concerned about the positive as well as the negative effects of the more minute division of labour within factories on workers. Adam Smith supported public education as a means to counter the mental de-gradation of workers confined to simple, repetitive tasks, while Karl Marx argued that in factories workers are reduced to "living appendages" to "lifeless mechanism".

One dimension that is often neglected even by those who share Smith's and Marx's concern is the inevitably collective nature of the production process. Since the advent of the industrial revolution, ever-developing division of labour (DOL) has made production an increasingly *collective process*. Even self-employed individual producers rely on the existence of a dense network of interdependences among producers. This interdependence can be seen at the level of the single production units (DOL at the shop floor level or within vertically-integrated firms), groups of production units (DOL at the cluster level or in local or national production networks) and at the level of production units distributed worldwide (DOL in global production networks).

To go one step further, and borrowing from Ricoeur (1992), we can define production structures as one of the most important 'structures of living together' in human society. Their relevance for development is not simply instrumental –

i.e. being the main places in which material wealth is created. Productive structures are complex social organisations whose functioning depends on various forms of co-operation. Moreover, the set of collective capabilities that workers develop in production units are not reducible to any individual human beings involved in the process. As language is an irreducible social good, production routines and organisational capabilities are intrinsically valuable systemic properties of communities (Abramovitz, 1995; Andreoni, 2014).

The idea of production as a collective process also leads us to acknowledge how human beings do not simply coordinate their productive efforts but also continuously experience processes of collective and cumulative learning. In Amsden's Late-Industrializing Model (or LIM) (Amsden 1989, 1991, 2001; Amsden and Hikino, 1994), processes of collective learning within productive enterprises (whereby production engineering and project execution capabilities are developed by producing and then remembered by doing) were considered the main factors leading to highest levels of micro-efficiency and long cycles of sustained competitiveness among the East Asian 'miracle' economies (Amsden, 1991, pp. 283-4).

According to Amsden, in successful cases of LIM, "[g]overnments' role has been one of joining with the private sector to *socially construct competitive assets* (resources, capabilities and organisations) rather than to create perfect markets" (Amsden 1997, p. 478**;** italics added). First, it has provided technology infrastructure in the forms of public technology consultancy services, aimed at helping producers absorb foreign technologies, reach higher product standards, and acquire better management techniques and practices. Second, it has used disciplined and conditional subsidies for export promotion, which is integrated with the strategy of infant industry

promotion. Third, it has orchestrated sectoral developments and inter-sectoral transitions. Fourth, it has been engaged in smart circumvention of increasingly restrictive international regulations of industrial policy measures (e.g., WTO restrictions on the regulation of FDI). As a result of these policies, "the state transformed the process of economic development and, in turn, was transformed by it" (Amsden 1991, p. 286).

Another reason why production transformation plays a constitutive role in a country's development is that it shapes the country's institutional, social and even ideological changes. Simon Kuznets spelled out this argument explicitly in various passages of his work among which the following is worth particular attention:

"If technology is to be employed efficiently, … institutional and ideological adjustments must be made to effect the proper use of innovations generated by the advancing stock of human knowledge. To cite examples from modern economic growth: *steam and electric power and the large-scale plants needed to exploit them are not compatible with family enterprise, illiteracy, or slavery…* Nor is modern technology compatible with the rural mode of life, the large and extended family pattern, and veneration of undisturbed nature…. Thus, not only are high aggregate growth rates associated with rapid changes in economic structure, but the latter are also associated with rapid *changes in other aspects of society – in family formation, in urbanization, in man's views on his role and the measure of his achievement in society*" (Kuznets, 1973, pp. 247-250; italics added).

The interplay between techno-industrial changes, on the one hand, and institutional, social and ideological changes, on the other hand, means that production structures and their transformation will not simply play an instrumental role in the development process, that is, creating the

material basis for better human conditions. By constituting and re-constituting individuals through their work experiences and by influencing the ways in which institutions and ideologies evolve, production structures affect the processes through which societies develop their own ideas of human development and freedoms. In other words, the content and the scope of human development, that is, the individual capabilities and freedoms that societies value, do not exist independently of their societies. They are historically determined and socially recognised as a result of the process of structural transformation, mainly consisting of changes in production structures.

The structural heterogeneity of production and the special properties of manufacturing

Emphasising the importance of production in the development process is only the first step in the construction of a New Developmentalist framework. We need also to recognise and analyse the structural heterogeneity of production and the resulting qualitative differences between different patterns of economic growth (Hirschman, 1958). In Neoclassical economics, the only differences among production activities or sectors are due to different factor proportions that are used. However, as Amsden (1991, p. 283) noted, "factor proportions, the pillar of [Neoclassical] price theory, does not capture the dynamics of industrial change". Real world production is characterised by structural heterogeneities. First of all, the same product can be produced in different ways – in other words, there is *process heterogeneity* even for the same product. Second, different production activities exhibit very different internal dynamics and external impacts – in other words, there is *heterogeneity across products and sectors*.

First, even for the apparently same product, different production units might be

organised with a view to obtain different product characteristics to fulfil different needs, such as different physical attributes or different product quality (Lancaster 1966). Product customisation or re-engineering of products with reduced functioning are such examples.

Second, even when they produce the same product, each production unit might use technologies that employ different combinations of factors (Stewart, 1972), as also recognised in Neoclassical economics. For example, the same production process can rely on more or less automated steps.

Third, even when the same factor proportion is used at the aggregate level, factors of production are heterogeneous in the sense that the same "resources" (e.g. technology systems, production equipment, skilled people, organisational systems) can provide different "services", according to the way in which they are deployed and combined in the actual production process (Penrose, 1959). For example, the productivity and the creativity of the same worker may change dramatically under different organisational conditions.

Fourth, only a limited set of organisational and technological configurations are feasible for each product, given the existence of "vertical constraints". This means that the decision to produce a particular type of intermediate product with a particular technology at one stage of production constrains the nature of the previous and the subsequent stages (Andreoni, 2014).

Fifth, as pointed out by Amsden (1977, p. 217) in her study of the Taiwanese machine tools industry, each production unit's choices (along the above-mentioned dimensions) are limited (or enabled) by the size and the composition of the market ("average income or individual consuming units" or, more precisely, the income distribution among the consuming units).

As for the issue of product-sector heterogeneity, the most important idea is that manufacturing has special properties,

as emphasised by Kaldor (1967) and Hirschman (1958).

Firstly, in manufacturing, there are greater opportunities for mechanisation and chemical processing, which make productivity increase easier. Productivity increase in agriculture is highly constrained by nature in terms of time, space, soil, and climate. By their very nature, many service activities are inherently impervious to productivity increases. In some cases, the very increase in productivity will destroy the product itself; if a string quartet trots through a 27-minute piece in nine minutes, we won't say that its productivity has trebled. For some other services, the apparently higher productivity may be due to the de-basement of the product; retail services or financial services in the recent period are the best examples (Chang, 2010).

Second, because of its ability to produce productive inputs for other sectors (e.g., machines, chemicals), the manufacturing sector has extremely important impacts on the productivity growth of other sectors (Rosenberg, 1982, 1994; Amsden, 1977). The increases in agricultural productivity that we have seen in the last century and half would not have been possible without the developments of manufacturing industries producing agricultural machinery, chemical fertilizers, pesticides, and increasingly genetically modified organisms. The rapid increases in the productivity of services like logistics and retail recently have been made possible by manufacturing industries producing more efficient transport equipment, computers, and mechanised warehouses.

Third, productivity growth has been driven not just by technological changes but also organizational changes, most of which have originated in the manufacturing sector. For example, large retail chains – be they supermarkets, clothes shop chains, or on-line retailers – apply modern inventory management techniques, developed in the manufacturing sector. Even in agriculture, productivity has been

raised in some countries through the application of manufacturing-style organisational knowledge, like computer-controlled feeding (the Dutch agriculture is the prime example).

Fourth, manufacturing also plays a special role in creating demands for other sectors, especially for the high-productivity sub-sectors. For example, most of the service activities that have high productivity and have seen high productivity growths recently – sometimes even faster than those of some sub-sectors of manufacturing (e.g., finance, transport, and business services) – are 'producer' services, whose main customers are manufacturing firms. Of course, countries can specialise in those services, but in many producer services (especially engineering, design, management consulting), their ability to export cannot be maintained in the long run without a strong manufacturing sector, as insights gained from the production process and the continuous interaction between the service provider and the clients are crucial for those services. Given this, a weakening manufacturing base will eventually lead to a decline in the quality, and the exportability, of those services (Pisano and Shih, 2012; Berger, 2013; Chang, 2014).

Finally, the manufacturing sector, producing physical and non-perishable products, has higher tradability than agriculture and, especially, services. Given this, a rising share of services in the economy means that the country, other things being equal, will have lower export earnings. Moreover, many of today's manufactured products are 'product systems' supporting the provision of a wide range of high-value customised services (e.g. typically 'smart' products, such as smartphones and cars but also modern production machines). Given this, when they lose manufacturing capacity, countries lose the ability to export those services that require those manufactured products that act as 'product systems' for them. In other words, manufactured

products are crucial even for increasing the tradability of certain services (Tassey, 2007).

More and better jobs

Bringing production back into the development discourse also implies a fundamental refocusing of the debate from poverty reduction to employment creation and improvements in working conditions. In this regard, Amsden (2012, p. 114) stressed the limitations of today's development debate as follows: "Poverty is caused by unemployment, owing to a scarcity of jobs that pay above bare subsistence, but grass roots poverty alleviation measures are exclusively designed to make job-seekers more capable although no jobs are available. The appropriate technologies of the grass roots movement that dominates anti-poverty policies are oriented towards consumption, ignoring production jobs".

By challenging the mainstream conceptualisation of poverty, Amsden drew our attention to the causal mechanism going from unemployment to poverty and stressed the self-defeating nature of those development policies that expand education in the absence of expansion and transformation of the productive sectors. As she pointed out, such attempts have led to educated people taking up jobs for which they are over-qualified and to 'brain drain' from the economically less developed regions and countries to the more developed ones. From Amsden's perspective, then, poverty-reduction policies and education policies have to go hand in hand with policies promoting production transformation (ILO, 2014).

A New Developmentalist paradigm needs to bring employment back in, in terms of both the quantity and the quantity of jobs. The re-conceptualisation of development as a cumulative process of production transformation, accompanied by the creation of more and better jobs, poses a fundamental challenge to the mainstream

view of work**,** namely the view that the quality of jobs is simply determined by its material rewards (wages plus other material benefits, such as pension schemes, health insurance, and education subsidies for children).

Fortunately, in the last couple of decades, there have developed a number of 'decent job / job quality' frameworks. For the most prominent example, since 1999, the ILO has promoted a 'Decent Work' framework (and indicators) aimed at promoting opportunities for decent and productive work in conditions of freedom, equity, security and dignity. More recently, Korner et al. (2009) have introduced a seven-layer model of quality of employment, including material rewards (e.g. income and other material benefits), intellectual rewards (e.g. skills development and training, workplace motivation, social dialogues), and the physical, intellectual, and emotional demands of the job (e.g. working hours and life-work balance; security of employment) (see Burchell et al. 2014 for a review).

Combining these contributions with Amsden's legacy and our theory of production transformation, a New Developmentalist framework should consider not just the material reward of employment but also three other dimensions – the *physical efforts* and the *intellectual efforts* that work demands of the worker and the *intellectual-emotional rewards* that workers gain from it. All of these are affected by the process of development.

The *physical effort* of work is determined by factors like the specific type of tasks workers have to perform, the way in which tasks are organised, and the extent to which the pace of work is determined by the pace of the machine they are working with. In the development process, this dimension is usually (although not always) improved through technological change and production upgrading. In many

industries, modern production technologies and machinery have substituted humans in the execution of the most physically demanding and repetitive tasks. Advances in the quality of the material used and of the machinery used to process it has created a healthier and safer working environment. Of course, the introduction of machinery involves a trade-off between productivity growth and job creation. However, while this means a structural unemployment problem in the short- to medium term, the acceptance and management of this trade-off is a necessary condition for the development of any economy.

While reducing the physical effort of workers, technological change often demands from workers significantly greater *intellectual efforts,* as it requires their adaptation to new production techniques and organisational routines (Lazonick, 2009). In certain cases, technological change might be so disruptive that the capabilities that the worker has developed over the years are no more useful. This problem may affect highly skilled workers more seriously, as they will need to make a lot more intellectual effort in re-training, if they are to maintain the existing standards in their material rewards. Organisational change might also necessitates significant extra intellectual efforts by workers. For example, the adoption of flatter management structures and lean production techniques might increase the intellectual efforts required for most jobs. The problem is not so much that technical or organisational changes might negatively affect workers in the short run but how these changes are managed. If workers' readiness to change is developed with continuous in-work training or if they have public support for off-the-job retraining (in employment or unemployment), the intellectual efforts required to adapt to changes are reduced significantly and therefore such changes might be, on

balance, a source of betterment, rather than a threat, for workers.

The last dimension of work to consider in relation to the development process is that of *intellectual and emotional rewards*. The 'decent work' literature has already pointed to the importance of providing intellectually satisfying jobs, creating a sense of involvement by the worker, and recognising each worker's identity (Spencer, 2009). However, less emphasis has been given to the differences in the scope for learning that different types of work offer. Workers performing tasks offering greater opportunities for continuous individual and collective learning tend to find their work intellectually and emotionally more rewarding. As Barrientos et al. (2011, p. 332) have pointed out, "if economic upgrading requires high and consistent quality standards that are best provided by a stable, skilled and formalised labour force, then economic and social upgrading may be positively correlated, especially when they increase worker productivity". In other words, the production transformation of the economy (inter-sectoral shifts and upgrading within sectors) is the most important driver of the improvement in job quality, which in turn facilitates production transformation.

Making the Sustainable Development Goals More Sustainable: policy trade-off and challenges

The need to move beyond the currently dominant development discourse has been gaining recognition, as seen in the United Nations' Sustainable Development Goals (SDGs) agenda. The SDGs offer a development agenda that goes beyond poverty reduction of the MDGs. In particular, Goals 8 and 9 have reintroduced employment creation and inclusive and sustainable industrialisation, while Goal 10 concerns the closely related issue of inequality reduction.

However, the SDGs framework still under-values the central role of production transformation and good employment generation in sustainable development. While a comprehensive assessment of the SDGs agenda is beyond the scope of this article, an application of our New Developmentalist framework reveals some critical shortcomings of the agenda.

First of all, the concept of sustainable development in the SDG agenda is mainly associated with the idea of environmental sustainability (Goals 12, 13, 14 and 15). Less emphasis is given to the fact that *social* sustainability requires an increase in the number and the quality of jobs, not simply the satisfaction of basic needs (e.g., education, water, energy; Goals 1 to 7). Nor is it fully recognized that *economic* sustainability ultimately depends on production transformation. A recent network analysis has shown that Goal 9 (the only Goal explicitly mentioning industrialisation) is a pretty marginal node in the SDGs network of goals – in other words, other goals and targets do not refer to Goal 9 very much (Le Blanc, 2014).

Second, the SGDs framework ignores the fact that countries at different stages of development face different challenges while having different production capabilities to address them. This means that the relationships between the goals related to employment and production (Goals 8, 9 and 10), those related to basic needs (Goals from 1 to 7), and those related to environmental sustainability (Goals from 11 to 15) are very much context-specific and therefore that each country has to identify its own pathway to sustainable development.

Third, and more critically, even when it acknowledges the interdependences between the goals (and the targets that serve them), the SDG agenda neglects possible trade-offs among the three groups of sustainability goals mentioned above. Some of these trade-offs were clearly recognized by Amsden (1997, pp. 475-6),

when she pointed out: “As for choice of industry and technology, modernization may be sacrificed for job creation in countries with large populations below a minimum poverty line. India’s concern with equity and unemployment, for example, has strongly conditioned its industrial targeting policies”. What is lacking in the SDG framework is an integrated approach in which these trade-offs are fully spelt out. Below, we illustrate how our New Developmentalist framework can help us identify and reconcile such trade-offs.

Within the SDGs agenda, the only area in which the potential trade-offs are explicitly addressed is the one pertaining to the relationship between industrial development and environmental sustainability (Bina, 2013). Here, the SDGs implies that industrialisation should be pursued only to the extent it is environmentally sustainable. However, seen from the New Developmentalist framework, there are fundamental problems with this view.

First, even if we prioritise environmental sustainability over social and economic ones, the way in which the SDGs address the problem of green technology transition in developing countries is highly problematic. This is because the SDGs ignore the fact that, without domestic industrial capabilities, green transition in developing countries will completely depend on foreign technologies. This will impose substantial pressure on their trade balances, especially if green technologies are relatively more expensive. Moreover, developing countries may be worse off in the long run if they followed the ‘green-first’ strategy, as it will reduce the resources available for the acquisition of imported non-energy technologies, which can boost domestic manufacturing production and economy-wide productivity.

In contrast, an 'industrialisation-first' strategy, focusing on the development of local production systems and technological capabilities, could generate greater industrial learning and upgrading and better sustain the balance of trade. In the medium run, it may even enable the emergence of domestic green technologies, which would make environmental sustainability more durable in the long run (UNIDO, 2011).

Moreover, developing countries might not even fully benefit from the fruits of their green investments under a 'green-first' strategy. The reason is that an effective use of imported green technologies (or, for that matter any other imported technology) requires the capabilities to identify the appropriate technologies mix, to adapt them to local conditions, and to operate them effectively (Fuso Nerini et al. 2016).

Finally, certain green technologies might not be suitable (for example, in terms of power intensity and continuity) for countries aspiring to develop energy-intensive industries**,** such as iron and steel, cement, pulp and paper, aluminum and selected chemicals (UNIDO and Fraunhofer ISI, 2014). As Amsden's work has shown, some of these industries have played a fundamental role in the "rise of the rest" and in their "learning to industrialise" (Amsden, 2001). The heterogeneous energy needs of different production sectors suggest that we need to advance differentiated greening agendas for different countries with different production structures.

Our discussion in this section has shown the problems with the conceptualization of sustainability in the SDG agenda and the potentially unsustainable policies recommended by it. This, in turn, strengthens our case for a fundamental re-formulation of the concepts of development and sustainability, in which production and employment play central roles, very much in line with Alice Amsden's legacy.

Concluding remarks

Building on Alice Amsden's legacy, we have shown the limitations of today's dominant development discourse, which combines Neoclassical economics with the CA. We have argued that, despite the Neoclassical element being more aware of market imperfections than was the 'hard-core' version that had prevailed until the 1990s and despite the addition of the CA element broadening the view of human welfare, this discourse is still anchored in the individualistic, consumption-oriented and exchange-based framework. This means the neglect of production, the failure to recognize individuals as producers who need decent jobs, and the neglect of collective capabilities, especially but not exclusively productive capabilities. The results have been development policies that are unable to transform the economic structure towards high-productivity activities that, directly and indirectly, create decent jobs.

As a corrective to this perspective, this article has advanced a New Developmentalist framework, which emphasizes the central role of production and micro-learning dynamics in development, while stressing the creation of good jobs as the most fundamental driver of human development. In order to demonstrate how this new framework can improve our understanding of development, the article has used it to critically examine the SDGs agenda. This has allowed us to point out the critical need to understand the trade-offs between different sustainability dimensions – social, environmental and economic – and the need to reconcile them in a way that allows developing countries to transform their production strucure and create good employment.

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[i] Interestingly, the development problems associated with this 'inter-temporal balancing' and its relationship with the choice of production techniques were the subjects of Amartya Sen's PhD thesis in Cambridge. Sen (1960) proposed a criterion for choice among different production techniques which maximises

the ‘reinvestable surplus’ yielded by investments.

[ii] The recent ‘discovery’ by Neoclassical economists of the fact that “what you export matters” (Hausmann et al., 2007) proves the point that the special properties of manufacturing industries as engine of growth have been (and are still) largely under-estimated by Neoclassical economics.