Catch up growth and social capability in developing countries: A conceptual and measurement proposal

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ABSTRACT

While the income per capita in the developing world since the turn of the Millennium has grown faster than that of the developed world, the question whether there is an ongoing process of catching up between countries remains. The notion of income convergence has provided many insights into the sources for long-run growth but has largely neglected the role of social capabilities in economic development. By social capabilities we mean the qualification of the 'theory of convergence' which asserts that productivity growth rates between countries tend to vary inversely with regard to productivity levels. The social capabilities approach holds that a country's potential for rapid growth is strong when "it is technologically backward but socially advanced" (see Abramovitz, 1986:388). This means that the potential to catch up under globalization is strongest for countries in which social capabilities are developed to allow successful use of technologies and where institutional arrangements are conducive to economic progress. Yet there is no clear agreement in the literature on the

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main components of social capabilities or how to measure them. Our framework argues that the role of capabilities in catching up needs to understand them in terms of structural transformation, economic and social inclusion, state´s autonomy and accountability. Without progress in these dimensions within-country inequality may increase and might in turn lead to stagnating growth and slim prospects for global income convergence.

Key words: Catching up, income gap, social capability, shrinking.

Crecimiento convergente y capacidad social en países en desarrollo: una propuesta conceptual y de medición

RESUMEN

Desde el cambio del milenio, el PIB per cápita de los países en desarrollo ha crecido más rápido que el de los países desarrollados. Sin embargo, la pregunta acerca de si estos países en desarrollo han comenzado un proceso de convergencia con los países más ricos del globo se mantiene. La hipótesis de convergencia de ingresos cuestiona las fuentes de crecimiento a largo plazo, pero ha descuidado en gran medida el rol de las capacidades sociales en el desarrollo económico. El enfoque de las capacidades sociales sostiene que el potencial de crecimiento económico es mayor para los países que desarrollan las capacidades sociales que permiten la adopción de nuevas tecnologías y honran a su vez los arreglos institucionales favorables al progreso económico de toda la población. Sin embargo, no hay un consenso claro en la literatura sobre los principales componentes de las capacidades sociales o cómo medirlas. Este ensayo sostiene que los procesos de crecimiento que diversifican la estructura económica apoyan la inclusión, la autonomía del Estado y la rendición de cuentas del mismo frente a la sociedad generan mejoras sostenidas en los niveles de ingreso per cápita. Sin el desarrollo de estas capacidades, la desigualdad económica puede aumentar, situación que podría, a su vez, conducir a un estancamiento del crecimiento y, por tanto, a reducir las perspectivas de convergencia global de los ingresos de los países en desarrollo.

Palabras clave: convergencia económica, brecha de ingresos, capacidad social.

INTRODUCTION

Over the last fifteen years, the average growth rate of the global economy has been lifted by developing countries while being held down by developed economies (United Nations Report World Economic Situation and Prospects, 2016). We have seen the definitive consolidation of the "Asian Tigers" as industrialized economies, the meteoric rise of China and India as well as growth figures in Latin America and Sub-Saharan Africa far surpassing their growth records of the last decades. The unanswered question is whether this trend will be sustained in the long run and lead to a genuine process of economic catching up. Influenced by Abramovitz´classic discussion of catching up dynamics, the purpose of this

note is to propose a conceptual and measurement framework that puts the role of social capability in the centre of this debate.

THEORIES OF CATCHING UP, GROWTH AND CAPABILITIES

The literature on catching up, or the theory of convergence, holds that differences in productivity growth rates between countries tend to vary inversely with regard to productivity levels. Opportunities for higher growth are therefore available for developing economies by tapping into the potential of the so-called *advantage of backwardness* through access to technology and know-how (Abramovitz, 1986). The experience of economic growth in the Western world over the past century or more has given support to the hypothesis of converging productivity levels (see e.g. Baumol, 1986; Barro & Sala-i-Martin, 1992; Friedman, 1992). In the world at large, the picture is different. At least until the turn of the Millennium, the empirical evidence indicated divergence rather than convergence in the global economy (e.g. Pritchett, 1997; Rodrik, 2011; Milanovic, 2016). In general, the poorest countries have not been catching up or converging in terms of productivity levels with the most advances countries. The convergence theory seems to have been applicable to East Asia only.

Perhaps the most well cited catching up theory applicable to the developing world is the "flying geese" model originally framed in the Asian context by Akamatsu (1962) and followed up by Lin (2011) for global development. Taking Japan as the benchmark, the original version claimed that the division of labor, emulation, and spillovers would predict successful development patterns of many Asian countries catching up with Japan. Although based on market mechanisms, non-economic institutions were part of the dynamics, since the application of technological innovations required a learning process for making efficient use of available technology. This in turn required the formation of strong financial, educational and legal systems. Although a useful metaphore and description of development pathways, the flying geese model implies that the catching up process is linear, uniform and deterministic and therefore of scant analytical value.

A more dynamic, and in our view more useful approach, is putting focus on "social capabilities". First proposed by Ohkawa and Rosovsky (1973) and elaborated by Abramovitz (1986; 1995), it suggested that making use of the *advantage of backwardness* depends on the "social capability" available in the catching up country. Although elusive, the concept of *social capability* has come to denote the incentive structures that promote innovation and investment and the ability to respond to these incentives (Rhode & Toniolo, 2006).

The term might include the components of educational levels, the quality of institutions, state capacity and social unity. Abramovitz (1986) suggested the following core components of social capability: managerial and technical competence, markets and institutions able to mobilize capital on a large scale, a stable and effective government and widespread trust and honesty in the population. Yet we have not been successful in identifying and measuring social capabilities for a

country in a comparably satisfactory way. The concept has been acknowledged as a relevant factor for understanding why some economies managed to converge to the richest economies while others failed, but a clear definition, and more concretely an empirically operational approach, that accommodates the key elements and does so in a persuasive and non-arbitrary way is missing.

Social capability is to a large extent observed in industrial countries and seems to come from cumulative institutional process that have sustained long term growth. This implies that the development strategy of developing countries cannot rest on the same set of capability endowments as in developed countries. For instance, the demographic processes are relatively faster in developing countries, and therefore investment in labor-saving technologies, which have been the key source of long-term growth in industrial economies, may be considered as less important in the short run. Furthermore, sheer popular access to productive opportunities or general state capacity in developing countries are typically worlds apart from the already developed countries. The difficulties to conceptualise and measure social capabilities in developing countries also relates to the many variables or indicators at play given that we are not sure about what to measure. Adelman and Morris (1967) pioneered the effort with data on 41 social, political and economic indicators for 74 developing countries in the period 1957-1962. They used factor analysis to reduce the many indicators into a small set of composite variables and produce three groups of countries: low, medium and high capability. Since this massive work, empirical studies to capture the importance of social capability for catching up have been extensive although attempts to further specify the concept have been rare (some exceptions are Temple and Johnson, 1998; Putterman, 2013; Fagerberg, Feldman & Srholec, 2014) and seldom used as a way to approach the prospects for developing countries to catch up with the rich.

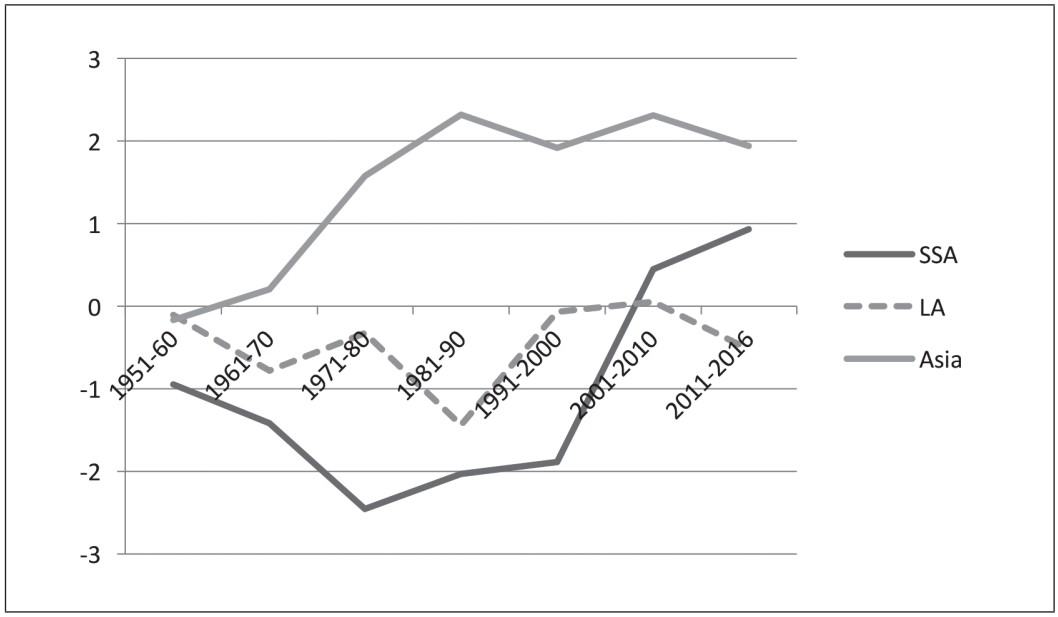
IS THE DEVELOPING WORLD CATCHING UP? NEW PATTERNS OF GLOBAL GROWTH

Over the period 1950-2016 the income difference between the richest and poorest countries have grown both in absolute and relative terms. In fact, the ratio between the top and bottom 10 countries in the distribution is measured by a factor of 20 (TED, 2016). Disparities within the European Union, as a reference, are not even close to the global figures. In 2016, one of the richest countries in the European Union, the Netherlands, and the one of the poorest, Romania, show a corresponding ratio of per capita incomes at 2.4 (TED, 2016).

It is clear that the world is no longer divided between the West and the Rest since the Rest is no longer a homogenous unit to categorize countries, if it ever was. Based on the TED database, we find that catching up with the average income level per country in Western Europe as the benchmark has only been observed in the economies of Pacific Asia whereas both Sub-Saharan African (except for Botswana and Mauritius) and Latin American countries are lagging further behind compared to the 1950s. Countries in Subsaharan Africa have on average not reached 20 per cent of

the income per capita of Western Europe. Countries in Latin America are between 20 and 60 per cent of the income per capita of Western Europe, with significant negative reversals of Argentina and Venezuela over the period 1950-2016. In terms of growth rates in the developing world, however, the last 15-20 years have been higher than in previous periods, with the possible exception of the 1950s (Figure 1).

Figure 1
Regional average of annual per capita growth compared to global average of annual per capita growth (global growth rate=0 %)



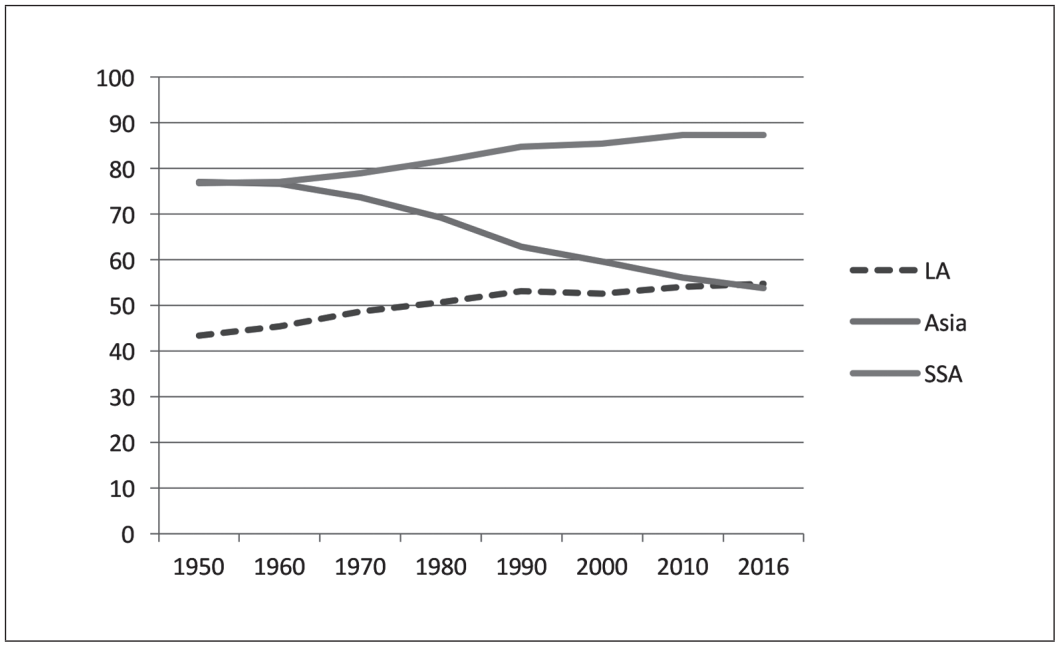
Source: Author´s calculation based on TED (2016).

Notes: 0 on the y-axis is the global average per capita growth. SSA: Sub-Saharan Africa, LA: Latin America

Are we now witnessing an era of unprecedented catching up? The question poses some empirical challenges. Although Latin America and Sub-Saharan Africa have over the past decade shifted towards a remarkable growth trajectory no progressive region-wide leaps have yet taken place. Rather, in terms of world ranking both Latin America and Sub-Saharan Africa have gradually lost position (Figure 2). Data also reveals that there is a process of regional clustering in both Latin America and Sub-Saharan Africa over time, judging by the coefficients of variation of positions in the world ranking (Figure 3). This

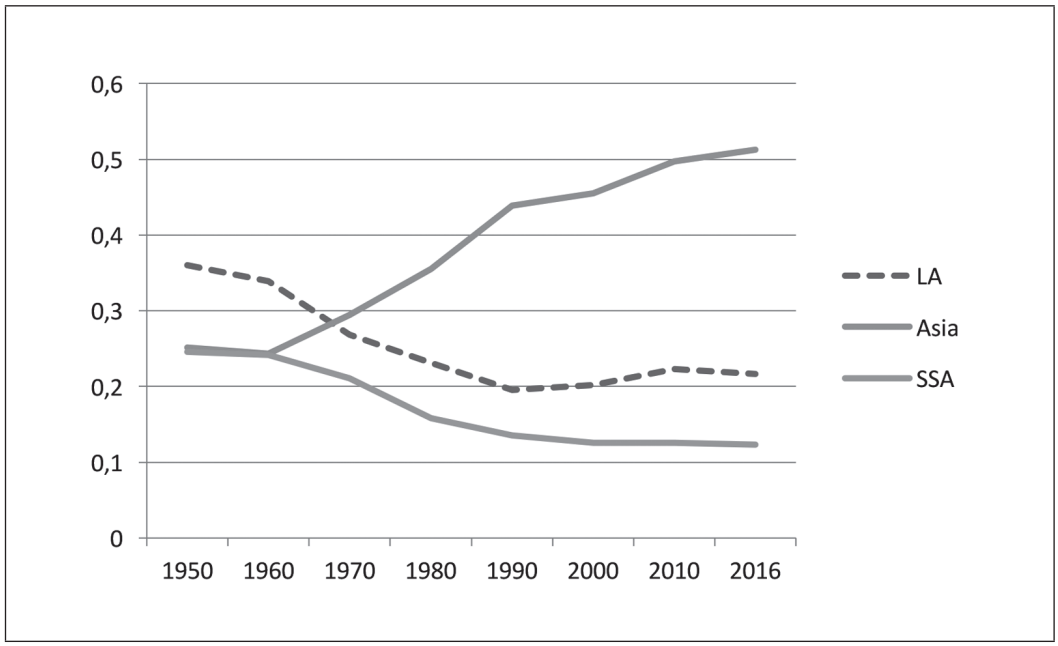
confirms the image of both Latin America and Sub-Saharan Africa as convergence clubs at the bottom. The opposite is true for Asia, where dynamic variations are larger, which conforms to the differences between growth rates, with a few making it all the way into the ranks of high-income countries: the first tier East Asian miracles and the ASEAN countries that have graduated to middle-income status. The picture looks similar if China and India are omitted from the analysis.

Figure 2
Changes in world ranking: regional averages



Source: Author´s calculation based on TED, the Total Economic Database -The Conference Board, 2016. Ranking 1 –n (n=total number of countries in the world).

Figure 3
Coefficient of variation for regions (based on world ranking)

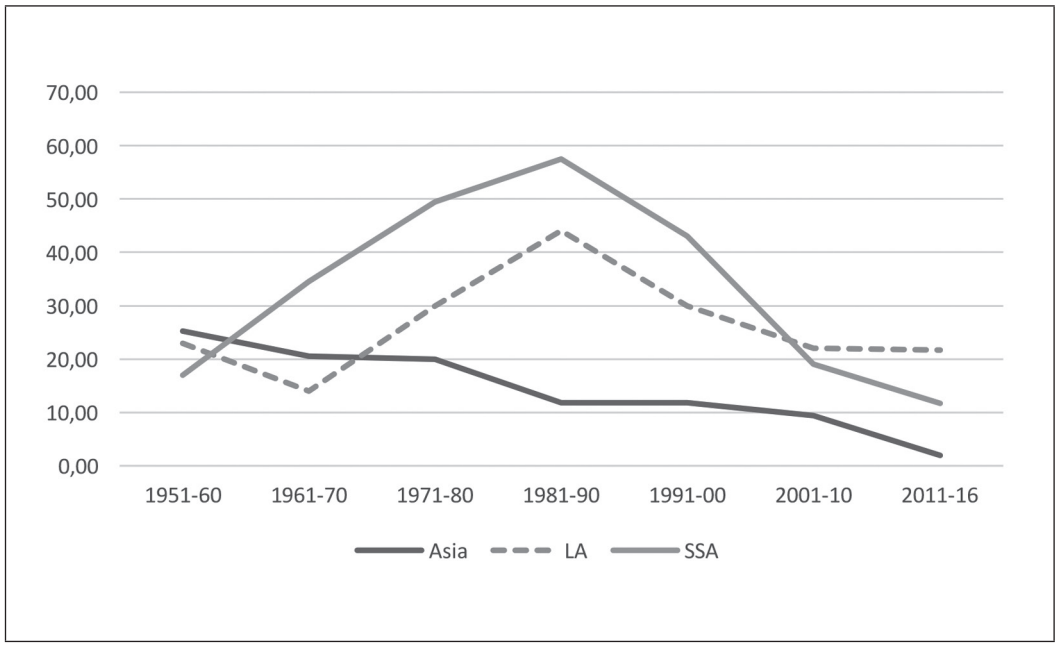


Source: Author´s calculation based on TED, the Total Economic Database -The Conference Board, 2016.

One indirect yet major cause for "forging ahead" is actually absolute economic shrinking of GDP per capita. Asian economies have forged ahead from other developing regions since the 1950s not only because it grew more, it also shrank less. Our understanding of catch up growth can therefore also be enlighted by examining periods of shrinking, or negative growth rates. In fact, it seems as if much of the success of economic development depends on the resilience toward economic shrinking (Figure 4). Although economic reversals or crises have been noted in the literature (Rodrik, 1999; Pritchett, 1997), the reasons behind the phenomenon of economic shrinking has received less attention. Since no production function can explain why economies shrink, other dynamics that needs to be accounted for by alternative measures seem to be at play. Arguably, resilience towards shrinking increases the likelihood for catching up to be sustained. The challenge for future research is to provide an answer to how some countries have been able to change their social and/or institutional arrangements in ways that limited shrinking and, despite falling average growing rates, managed to increase their long run rates of growth. The most elaborate treatment is

found in Broadberry and Wallis (2016) who stress the historical importance of shrinking for the rise of the Western world. They argue that impersonal rule as the cornerstone of effective institutions is the fundamental reason for the ability to reduce economic shrinking. For the study of developing countries, we believe that social capabilities are also key determinants of the resilience against economic shrinking.

Figure 4
Frequency of shrinking (percentage of years of shrinking per decade) in Asia, LA, SSA



Source: Author´s calculation based on TED (2016).

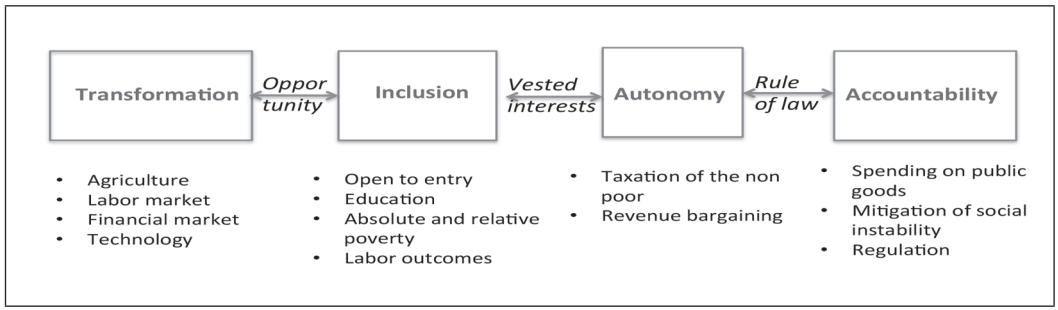
The fact that two tiers of Asian countries have changed their relative position in the income ranking indicates that poverty traps to development are not destiny. At the same time availability of technology and higher returns from low level of capital in general seem not to be enough to sustain long term growth and reduce shrinking (Broadberry & Wallis, 2016). We need to dig deeper to understand whether and to what extent growth might be sustained and this is why we need to find ways to grasp the capabilities that enable economies to embark upon a sustained development path.

A conceptual framework and four dimensions of social capability

We propose a conceptual framework and a set of indicators to measure the role of social capability in the global income hierarchy. We follow quite closely the Kuznets-inspired discussion by Abramovitz (1995), which asserts that social capability basically consists of elements relating to (1) "people's basic social attitudes and political institutions" and (2) "the ability to exploit modern technology". From these two basic elements, we derive four interrelated, yet distinct, dimensions: inclusion, autonomy, accountability and transformation. Adhering to (1), which, according to Abramovitz, contains social arrangements for effective incentives, we regard this as "inclusion", that is the structures in which people operate – the economic, social, political, cultural and environmental conditions - which are crucial for individual access to productive resources and the sense of national belonging. Regarding effective political institutions, we believe them to be captured by the "autonomy" and "accountability" of the State. The latter category (2), the ability to exploit modern technology, is at the social level effectively synonymous with "transformation", which is an indicator of the ability of an economy to allocate productive resources to economic activities with higher value added, including labor, and its willingness to be engaged with the risks of the international economy.

Unlike the groundbreaking attempt by Adelman and Morris (1967), who replaced a group of target variables through factor analysis, we have assigned responsibility for the realization of certain dimensions to processes, even though their dynamics are closely associated. Figure 5 shows the four related dimensions for understanding social capability: "transformation", "inclusion", "autonomy", and "accountability". In sum, self-sustained growth is a function of the ability to adapt the structure of the economy to continuous technological change, to include people in through a social contract that shares the surplus in the economy and eases the greater exposure to the risks of the international economy, without eroding the modernization and nation-building properties of the State. The four dimensions, or processes, of social capability aimed to reflect the deeper forces at play for countries' ability to build resilience to economic shrinking and achieve sustainable catching up. For each of these dimensions we also suggest some indicators to measure their impact on the development of the studied countries and period.

Figure 5
A conceptual framework of social capability: the four dimensions



Transformation

We examine the driving forces of agricultural transformation, which according to theory and broad empirical findings are the defining processes for the transition into a diversified economy (Ranis & Fei, 1966; Timmer, 1988; Christiansen, Demery & Kuhl, 2011). The benefits from the transformation of agriculture are abundant such as cheaper food, release of labor, raw material for the industrial sector and savings, but its main result is the interplay between all these benefits or the so called linkages across sectors (Johnston & Mellor, 1961). Latecomers aspiring to catch up through the transformation of agriculture are indeed improving resource allocation through linkages across economic sectors, but they need to be aware that as the agricultural sector becomes more productive, its income share in total GDP declines and therefore less likely to act as a source of catching up growth in the long run (Rodrik, 2014). Hence the transition out of dualism in today´s developing countries can be captured through the agricultural gap share, that is, the difference between the agricultural contribution to GDP and the agricultural labor share, so that a reduction of this difference implies the convergence of the agricultural sectors in terms of productivity and trade towards a sectoral pattern close to those existing in developed countries (Timmer, 1988; Andersson & Palacio, 2016a).

Apart from the fact that the population is usually better fed since the rise of the agricultural productivity, an important part of the transformation is the employment of some excess labor in the modern sectors of the economy (Lewis, 1954; Gollin *et al.*, 2013). The traditional sectors, which usually have the greatest capacity to absorb labour, are becoming economically less significant: family farming and micro enterprises. In other words, the emergence of larger firms seems to be a clear sign of transformation. At the same time, the dual nature of growth in most developing countries today is characterized by the expansion of the service sector rather than a labor-intensive manufacturing sector (Ghani & O´Donnell, 2014). But the service sector

is large and heterogeneous in terms of sectoral productivity and has so far not been able to replace manufacturing to play the main role in the process of catching up. In the absence of labor-intensive agriculture as in the East Asia during the 1970s, and large pools of informality in the service sector, social protection networks are the key to managing the unfortunate consequences of structural change on the income distribution (Andersson & Palacio, 2016b). But this might be prohibetively costly. Thus, an understanding about what creates employment in (and outside) these declining sectors can make the difference between failure and success in catching up. Likewise, an indication of the transformation is the adoption of "decent employment" in the formal labor market as a summary measure of the important aspects of job quality (Ghai, 2003).

Savings are also an important part of the transformation. As in Gerschenkron (1962), the access to capital undergoes structural change during the development process. Financial markets play a vital role in the efficient distribution of surplus capital and therefore the development of finanical intermediaries is central to any development strategy. In a broader sense, latecomers will develop new financial structures gradually to finance the emerging sectors and consumption patterns. Using indicators of the size of equity and public and private bonds, countries and regions can be grouped according to the stages of finance (World Bank, 2006).

Finally, there is no transformation without changing the stock of technologies in use. Technologies are closely linked to its sectoral output pattern and to firm size structure, as well as to firm level choices. The structure of labor and capital markets, which determine labor and capital costs to the firm, are key determinants both of firm-level technology choice and of sectoral composition and firm size structure. So the policies affecting the capital as well as the labor market are important aspects of the transformation of both agriculture and non-agriculture and therefore the diversification of the economy.

Inclusion

The second dimension is *inclusion,* which at its most fundamental level is a pro-poor growth process where poor people benefit in absolute terms (Ravallion & Chen, 2003; Bourguignon 2002). Inclusion is important given the extreme inequality of most developing countries. Thus, the rate of change in poverty is one way of informing us whether the growth process has been inclusive or not. Developing countries can also signal progress if growth is connected to identifiable social segments that are potential losers from for instance structural changes in the economy. By identifiable social groups we mean age, class or caste, disability, gender, race, religion, or sexual preferences (Buckhardt, 2007).

One key area is the extent to which the economy is open to entry, allowing the development of competitive markets. Here it matters whether advances in agricultural productivity, through its impact on lowering food prices translating into lower labor costs, will affect employment opportunities outside agriculture and, in extension, increased household income growth of the rural population (Gelb *et al.,* 2013;

Grabowski, 2014). Open entry also entails access to education (for creating opportunities and capabilities). For instance, education is associated with the change of occupation and also the place of residence from the countryside to the town or the city, where the context usually demand other type of skills. The novelty is though to treat education as a right and promote supply driven policies for free education as in many parts of Africa and Asia (Banerjee & Dufflo, 2011). For instance, in Indonesia the effort to use oil money in the 1970s to build schools appear to be paying off. Education and wages grow faster in regions with more schools. Furthermore, Taiwan established compulsory schooling in 1968 and saw the elimination of the gender gap in education and the fastest decline of infant mortality in regions experiencing the educational reform.

As noted before, the transformation of agriculture should provide more food, rising income for unskilled labor, and surplus capital. In this line, labor market outcomes are important given that, in the absence of strong social protection networks or non-competitive financial markets, they are the only determinants of economic welfare for most families (Ghai, 2003). In other words, the labor market might define whether a family is in poverty or not. A poverty line, albeit necessary and useful, must be complemented with dynamic measures of relative poverty that reveal whether the bottom 10 or 20 or 50% income share is growing faster than the top 1 or 10% income share (Ravallion & Chen, 2003; Alvaredo, *et al.*, 2016). Thus, non-income measures of health, labor market outcomes and the rate of change in poverty across groups also inform us whether the growth process has been inclusive.

Another indicator of inclusion is access to any form of formal credit, and ownership of a savings account (Allen *et al.*, 2012). Around 2.5 billion people have no access to financial services at all and have to rely on informal mechanisms to save or insure themselves against economic shocks (Ledgerwood, *et al.*, 2013; World Bank, 2017). Indicators of financial inclusion are associated with lower banking costs and greater proximity to financial providers. In this line, policies aimed to promote inclusion such as offering basic or low-fee accounts, granting exemptions from onerous documentation requirements, allowing correspondent banking, and using bank accounts to make government payments are especially effective among those most likely to be excluded: poor and rural residents. Around twenty percent of rural households living on less than a dollar a day have access to credit (Banerjee & Duflo, 2011). Microfinance might play an important role in providing a safety net and in consumption smoothing. Whether it should be considered an important component of an inclusion strategy depends on the answer to the question of how much savings it does facilitate. At a general level, economic actors in countries with lower costs of access to financial services are more likely to mobilize capital to high value activities.

Autonomy

We propose that *autonomy* is the ability of the state to keep vested interests at bay. Here an intuitive and simple measure of autonomy can be the State´s ability to impose direct and progressive taxation on the non-poor, given that both

characteristics are not usually common in the tax system of developing economies. The State can also tax and subsidize certain goods and services with the aim of altering the income distribution. If the changes benefit the poorest segments of the population without damaging the incentive to save and invest of the richest segments, the balance between equity gains and efficiency losses from taxation (Diamond & Mirrlees, 1971) can be achieved, or at least used as a benchmark given the political and economic context. Apart from examining the tax structure, public wealth (public assets minus public debts) also needs to be considered because it determines the ability of the government to redistribute income or mitigate rising inequality through equalization of primary assets such as land, health or education reforms. The most notorious example is public sovereign funds in Norway, more recently in Chile (Adler & Magud, 2013).

The most frequent examples relate to monetary/macroeconomic, international trade, or perhaps health and education institutions. In the monetary area, the majority of countries have clear objectives: a target for inflation rate, which is based on a relatively good understanding of the mechanisms that link the instruments of policy to the outcomes, and implemented through those mechanisms. In this area usually the central bank is responsible and has a high degree of control over the related policy instruments. Furthermore, a generally accepted bureaucracy of technocrats carries out the design and the execution of the policy, and other branches of political power are not expected to dictate policy. Foreign trade policy is somehow a similar case. There are policy instruments available if the country wants to limit or in other ways affect the level of exports and imports. Both here and in the monetary area, some countries do better than others, and capturing these differences provides clues on the state of autonomy.

Late-comers can catch up with institutional arrangements that do not constraint downward national tax levels and ensures credible commitments to investors or special interest groups and provides opportunities for the creation of consensual and representative government through "revenue bargaining" between states and organized citizens (Brautigam *et al.*, 2008). Here we believe that the shrinking sectors in terms of employment—family farming and the micro, small and medium enterprise (MSME) sector -- can be part of that bargaining chip exercise.

Accountability

While the existence of an autonomous state might also lead to arbitrary governance, abuses and waste, one should therefore measure institutional quality also by the level of accountability, i.e. the quality of governance and provision of public goods (Besley & Persson, 2013). In other words, the patterns of recurrent spending on one sector rather than others provide light on the most productive sectors or those ensuring an expected higher social return. Abad and Lindert (2016, p. 244) write about Latin America, `Even before the 1990s, when public education was the main form of social spending, less was committed to mass education than in East Asia, East Europe, or the Middle East at similar levels of average

income´. Thus, a country that invests little in education and infrastructure or invest less in its younger generations while favoring the seniors and the already well-to-do might be an example of low levels of accountability.

Another example comes from the volatility of social spending. In market economies, we expect to see accountability to be related to pro-cyclical social spending. If the country does not follow the swings in the economy activity, and commits its budget to honor the social contract, there are better chances to catch up in the long run. Even though the issues discussed here are highly politicized and the level of public debate is often insufficient, voting out governments, or parties, that do not deliver their promises also influence the pro-cyclical nature of social spending. Thus, latecomers with increasing or higher levels of social expenditure than industrialized countries when they had similar levels of development may be more likely to catch up, and plausibly more politically stable.

CONCLUSIONS

In this paper we propose a conceptual framework for identification and measurement of social capability enabling analyses of actual and potential processes of economic catch up among developing countries. Taking the discussion by Abramovitz and others as a theoretical point of departure, we argue that such capabilities are the societal abilities to respond to investment and innovation incentives, which cause sustained growth and therefore catching up. Looking at old and recent historical examples of catching up, we argue that an economy endowed with social capability can develop resilience to economic shrinking as well as achieve sustained growth. By exploring the global hierarchy of the last 60 years, we conclude that it over the entire period has diverged, albeit with dramatic changes within, fuelled by the rise of two tiers of Asian countries, and the relative decline of Latin America and Sub-saharan Africa. We also note the relatively strong growth performance of the latter regions over the last decades. To fully grasp the catch up process, we realize that relatively free technology and high capital returns are not enough to catch up in the long run, and social capability are indeed the underlying institutional arrangenement behind the process of using production factors efficently while honoring the social contract.

The key capabilities relate to processes of *transformation* through the increased efficiency in the use of factors of production, of *inclusion* through the extent to which the economy is open to access and entitles people to take productive part of economic ativities, supported by the *autonomy and accountability* of the State as a vehicle to insulate elite pressure and promote nationbuilding and prosperity. Thus, we see capability as a set of at least four processes, not variables, which are well grounded in theory and empirics, to which we assign responsability for the catching up dynamics. We also realize that these processes are multidimensional, endogenous, and interactive. Thus there is no surprise that the literature has not been able to provide a summary measure that captures all that matter in the proccess of building social capability. However, the criteria used to choose the indicators to make possible

comparative analysis of catching up should be transparent, quantifiable and traceable over time. This will analytically enrich the study of different catching up experiences in the developing world and provide possibilities to assess whether the process might be sustained or just constitute a temporary flash.

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