Resilience to economic shrinking as the key to economic catch-up

A social capability approach

Andersson, Martin; Julia, Juan P.; Palacio, Andrés

2021

Document Version:
Other version

Lund Papers in Economic History

No. 231, 2021

Resilience to economic shrinking as the key to economic catch-up: A social capability approach

Martin Andersson, Juan P. Julia & Andrés F. Palacio Ch.

DEPARTMENT OF ECONOMIC HISTORY, LUND UNIVERSITY

Resilience to economic shrinking as the key to economic catch-up: A social capability approach

Martin Andersson[1], Juan P. Julia[2], Andrés F. Palacio Ch.[1]

Economic History, Lund University, Sweden[1]
Economic History, Gothemburg University, Sweden[2]

Abstract

Economic growth is usually considered the main driver of convergence – the attainment by developing countries of income levels similar to those of industrialised nations. Although it has been recognised that achieving economic growth is not the same as sustaining it, analyses of the role of economic shrinking in the catching-up process, and how to build resilience to shrinking, are in short supply. The objective of this paper is to understand how emerging economies can limit the frequency and magnitude of economic shrinking and thus increase the probability of catching up. To this end, we analyse the role of social capabilities as determinants of resilience to shrinking in 26 developing countries during the period 1964–2018. As a representation of a broad spectrum of capabilities, we construct an Index based on five interrelated social and economic capabilities: (i) transformation of the economic structure, (ii) market inclusion, (iii) social stability, (iv) accountability and (v) autonomy of the state. We demonstrate that countries with better social capabilities are more resilient to shrinking than countries with poor capabilities. Poorly endowed countries do not necessarily lack the ability to generate growth, but their limited resilience prevents them from catching up. In addition, the paper shows that social capabilities are highly relevant in smoothing the negative effects of international trade shocks in developing countries. The main implication of the paper is that improvement of social capabilities should be regarded as a key instrument to promote long-term, sustainable economic development, and it should be emphasised over short-term maximization of economic growth. This could be done by conciliating socioeconomic transformation with other concerns, such as the sustainable use of natural resources.

Keywords: economic shrinking; social capabilities; resilience; economic growth; catching up; developing countries.

JEL code: O47; O57

1. Introduction

Since the 1950s only a few developing countries have managed to catchup with developed industrialised economies. To understand why some economies have achieved convergence while others have not, economists have focused on analysing the causes and sources of economic growth. Economic growth is regarded as the ultimate driver of convergence, and the vast number of models that aim to explain this process demonstrates the extensive attention it has received. Recently, however, it has been argued that it is the reduction in the incidence of economic shrinking – when the per capita income level contracts from one year to another – that generates long-run economic growth and convergence (North et al., 2009; Broadberry &Wallis, 2017). While all countries have the ability to achieve growth, just a few have managed to reduce the magnitude and frequency of economic shrinking. This is what happened in large parts of Western Europe, where the declining frequency of shrinking since the end of the eighteenth century improved long-run economic performance. After 1950, a similar reduction of economic shrinking took place among rising East Asian economies. While the frequency of shrinking remained high among countries in other developing regions, such as Latin America and Sub-Saharan Africa, lower rates in East Asian countries clearly promoted the long-term catching-up process in the region.

Despite the importance of economic shrinking and a vast literature on economic crises, efforts to empirically understand what generates resilience to this phenomenon from a wider social perspective have been rare. Classical production functions and conventional growth theories do not provide any explanations. Therefore, there is scant understanding of why some countries shrink more often than others, and what countries can do to change their social and institutional arrangements to overcome chronic shrinking and attain convergence. By providing an explanation of how resilience to economic shrinking can be strengthened, this study aims to start filling this gap. In particular, we analyse why East Asian economies have managed to develop resilience while countries in Latin America and Sub-Saharan Africa have not.

To identify and understand the determinants of resilience to economic shrinking, we develop a framework that analyses the make-up of resilience based on the concept of ‘social capability’ (Abramovitz, 1986; 1995). We construct a social capability index and apply it to the economies of 26 developing countries for the period from 1964 to2018. The index is based in five broad aspects that can be considered to be directly associated with resilience to

economic shrinking: (i) transformation of the economic structure, (ii) market inclusion, (iii) social stability, (iv) accountability and (v) autonomy of the state.

Our findings are as follows: Well-endowed countries are less likely to suffer from frequent and severe occurrences of economic shrinking. The difference between having a good set of social capabilities compared to a weaker one is according to our Index quite significant. Countries with well-developed social capabilities shrink less over time, and when they do shrink, the shrinkage is usually not very deep, making recovery easier and convergence more probable. On the other hand, both frequency and magnitude of shrinking are high in countries with poor capabilities, preventing them from catching up. Not only do social capabilities deter shrinking in the long run, but the probability of recording a negative growth rate in the year following a shrink year is much higher in countries with poor capabilities. Both kinds of economies are able to grow, and unequal, less complex economies can achieve short-term economic growth; however, it is unlikely that they will do so over the long run. In this respect, the role of state autonomy seems to be of great importance. Additionally, the relevance of social capabilities in building up resilience is even greater when considering the effects of international trade shocks.

These findings suggest that building up resilience to economic shrinking is a way to promote convergence. Economies that undergo this process may also become less likely to suffer from the negative effects of economic globalization (uncertainty in international prices, financial volatility and political polarization), making it possible to achieve convergence in the long run. For low-income countries or emerging economies, some policy implications can be derived from our results. First, countries should not focus only on short-term growth but rather strengthen the capabilities that support resilience and long-term growth. This can be pursued with policies that aim to reduce inequality, promote economic complexity, increase state autonomy and capacity, and extend accountability and social stability. Moreover, poorer economies often aim for short-term returns via the hotfoot extraction of natural resources to cater to international demand. When done indiscriminately, such extractive activities may come at the expense of ecosystems and natural diversity.

The article is organised as follows: Section 2 surveys the literature on economic catch-up and reveals the infrequency of studies on economic shrinking. Section 3 discusses economic shrinking trends in East Asia, Sub-Saharan Africa and Latin America since the 1960s. Section 4 analyses the literature on social capabilities, while Section 5 introduces our social capabilities index and how it is constructed. In Section 6 we empirically analyse the role of social capabilities in the construction of resilience to economic shrinking. The role of

resilience to economic shrinking under trade shocks is discussed in Section 7. The article concludes with a summary of our findings and their implications for future research on this topic.

2. Economic shrinking and the catch-up process

Since the middle of the twentieth century, sustained economic growth has spread to a small set of formerly developing countries, implying that only a few countries have been able to permanently narrow the gap with advanced economies. Only some East Asian nations (Japan, South Korea, Taiwan, Hong Kong and Singapore) have managed to transform their economic structures and experience a strong industrial transformation to reach the status of developed nations. On the other hand, most Latin American and African economies have not experienced such a transformative process, leading to divergence both globally and within the developing world. Regardless of whether growth in low-income countries will pick up or if the world economy may be less supportive of developing economies in the coming years (Rodrik, 2017), it is pivotal to understand how the convergence/divergence process unfolds in the developing world.

Standard convergence theory suggests that differences in productivity levels between countries tend to vary inversely with productivity growth rates. According to this theory, developing countries should be able to achieve higher growth rates and catch up through the 'advantage of backwardness' and actualize that potential by accessing already existing technology and knowledge. The hypothesis of converging productivity levels seems to have been confirmed by the economic growth experience of the Western world during the twentieth century (see, for example, Baumol, 1986; Barro &Sala-i-Martin, 1992). Though many economists believe that this theory is applicable to East Asian growth as well, it has been argued that the convergence of some East Asian economies was fuelled by the accumulation of resources rather than rising productivity (see for instance Krugman, 1994). At any rate, when considering the global economy over the last half a century, it seems that divergence has been its dominant feature (Pritchett, 1997; Rodrik, 2011; Milanovic, 2016).

Despite the fact that all policy recommendations aim to encourage catch-up by developing economies, there are just a few models and empirically generated theoretical approaches that might apply to them specifically. A standard reference should be Gerschenkron's (1962) work, which suggests that the potential advantage of backwardness can overcome the so-called 'necessary prerequisites' by acts of substitution. Following a

related idea, Ohkawa and Rosovsky (1973) and Abramovitz (1986) elaborated upon the concept of social capability as the basis of the theory of convergence.

The social capability approach holds that a country has stronger potential for catch-up growth when 'it is technologically backward but socially advanced' (Abramovitz, 1986, p. 388). Under globalisation, the potential to converge would be strongest for countries in which 'social capabilities are sufficiently developed to permit successful exploitation of technologies already employed by the technological leaders' (Abramovitz, 1986, p. 390). The realisation of this potential involves a number of structural and institutional determinants, such as education level, social stability and state capacity. Also, social capabilities are associated with both the 'ability to exploit modern technology' and 'people's basic social attitudes and political institutions' (Abramovitz, 1995, p. 29).

In general, the literature on the nature and causes of economic growth in the post-war era has devoted little attention to the role of resilience to economic shrinking. In order to understand the improvement of long-run economic performance, studies have focused to the importance of concepts such as volatility and instability of growth rates, growth reversals and growth collapses. Negative growth rates as a frequent phenomenon in developing countries has been analysed by Pritchett (2000) who pointed out that the standard growth literature is of little help to understand this issue. A related analytical approach aims to measure and understand the 'episodic' nature of economic growth (e.g. Pritchett et al., 2016). Contributions to these discussions have also been made by Easterly et al. (1993) and Rodrik (1999), who have highlighted and explained growth 'collapse' and 'reversals' through the occurrence of economic shocks and social conflict. Research has also advanced on finding ways to empirically capture distinct episodes of growth dynamics and to associate a number of correlates with either growth spurts or growth stops (Hausmann et al., 2006; Jones & Olken, 2008; Berg & Ostry, 2011; Kar et al., 2013). Though these studies may help to understand periods of growth, they do not analyse the relative importance of economic shrinking and its role in the catch-up process of developing economies, nor have they provided a theoretical model that explains why some developing countries are more resilient to shrinking than others.

In an exception, Broadberry and Wallis (2017) explicitly discuss long-run perspectives on economic shrinking by looking to historical data and offer possible explanations of why the industrialised West has managed to overcome it. Based on an analysis of the growth and shrinking trajectories of four industrialised Western economies (the UK, the Netherlands, Italy and Spain), they argue that institutional change and the movement towards 'impersonal

rule' are the reasons for the reduced incidence of economic shrinking and the fostering of modern economic growth. They note the importance of changes in the rules that govern societies and 'open access orders' to limit the influence of powerful elites (see also North et al., 2009). Although the paper provides an explanation of how economic shrinking divided the world into developed and developing countries, it does not document the different shrinking experiences in the developing world and the driving forces of this phenomenon.

Given how little attention the role of shrinkage has received in the literature on economic growth, the objective of the present article is to analyse plausible causes of resilience to economic shrinking in the developing world during the last 60 years. We then document the patterns and trajectories of economic shrinkage in the Global South and attempt to understand the concept of social capabilities, establishing a clear definition and setting up an intuitive way to measure them in order to determine their role in the configuration of resilience.

3. Patterns of economic shrinking in developing countries (1964–2018)

In order to develop an understanding of resilience to economic shrinking, we first need to distinguish its patterns in the developing world. We can say that a country experiences economic shrinkage when its annual GDP per capita growth rate is negative. To document these patterns, we use data from the Penn World Table (v. 9.1) on GDP per capita growth rates for 45 countries in Sub-Saharan Africa, 17 in Latin America and 21 in Asia.

We calculate the economic performance (EP) over the long run by considering the net effect of the contributions of economic growth and economic shrinking. The contribution of economic growth is equal to the product of its frequency *f(g)* and its magnitude *m(g)*; analogously, the contribution of economic shrinking equals the product of its frequency *f(s)* and its magnitude *m(s)*. *Frequency* refers to the percentage share of growing and shrinking years respectively over a period of time. Thus, EP can be expressed algebraically as follows:

$$EP = f(g)\, m(g) + f(s)\, m(s) \quad (1)$$

As $f(g) + f(s)$ equals 1, the equation can be reduced to three independent variables:

$$EP = [1 - f(s)]\, m(g) + f(s)\, m(s) \quad (2)$$

The above identity was developed and used by Broadberry and Wallis (2017) to show that the declining impact of *f(s)* triggered long-run economic growth in industrialized Western economies since the nineteenth century. Additionally, it was shown that the reduction in the incidence of this component, *f(s),* has a greater impact on long-term economic growth than its magnitude, *m(s)*. Figure 1 shows that it is consistently the poorer countries in the world that have a higher susceptibility to experience economic shrinking (see also WDR 2017: 5-6). Furthermore, the magnitude of growth is stable and relatively universal among developing regions, while the magnitude of shrinking and its overall impact are highly volatile. This suggests that it is resilience to economic shrinking, not growth, that makes the difference in the catching-up process when looking at the performance of Asian economies in comparison with Latin American and Sub-Saharan African countries.

(Figure 1 here)

Next, we will look at the trends and patterns of economic shrinkage in developing countries in order to identify the determinants of resilience. Figure 2 shows the development of the frequency of shrinking and the magnitudes of both growth and shrinking in Asian economies. Here, frequency rates ranged around 10–15 percent (which means that, on average, Asian countries shrank 1 to 1.5 years per decade). Region's frequency peaked during the 1970s; after that, its decline was clearly sustained, falling below 5 percent in the last decade. The magnitude of growth remains constant, varying between 4and 6 percent of the annual GDP per capita growth rate. The shrinking magnitude remained constant at around 3 percent during the first three decades, then peaked in the 1990s when the Asian financial crisis occurred; after that, it experienced a significant reduction. Here we find highly resilient economies like the Republic of Korea (which shrank twice in 56 years), Thailand (three times in 56 years) and Malaysia (six times in 54 years). Also, the decline in frequency was driven partly by countries that were high 'shrinkers' in the 1960s and 1970s but barely experienced economic shrinking since then (as India, Indonesia, Myanmar or China).

(Figure 2 here)

In Figure 3, the patterns in Sub-Saharan Africa look quite different than those of Asian countries. Until the 2000s, when the region experienced a strong improvement (the

commodities ‘boom’ took place), the frequency of shrinking was above 30 percent. Both magnitudes show similar numbers in most decades; the main difference between the two was achieved in the first decade of the twenty-first century. The situation in the region was turbulent in the 1980s, with a frequency higher than 50 percent and the magnitude of shrinking higher than the one of growth, meaning that the region’s GDP per capita actually contracted over the entire decade. The frequency of shrinking in the 1970s and 1990s was also quite noteworthy. Nevertheless, these aggregate numbers show poor attainment and high heterogeneity within the region. On the one hand, there are countries like Nigeria, Republic of Congo and Gabon, amongst others, that continue to experience shrinking frequencies around 40–50 percent each decade. On the other hand, there are relative champions with small shrinking rates, that is, countries that experienced an overall strong improvement during the entire period of analysis (e.g. Mauritius, Botswana and Ethiopia).

(Figure 3 here)

In Latin America shrinking patterns (Figure 4) look similar to Sub-Saharan Africa, although with lower levels. The situation in the region reached its worst point in the 1980s, with a lost decade in absolute terms of growth (the region shrank half of the years and with greater magnitude than the magnitude of growth in growing years). The region slowly improved thereafter, recovering to the levels of the 1960s during the last two decades. The trend here is typical of a region that is highly dependent on commodity exports. Again, there is a wide range of experiences within the region. Some countries have a high tendency to shrink (e.g. Venezuela, Argentina and Brazil) while others shrink more infrequently, with rates similar to those of East Asian countries (e.g. Colombia and Costa Rica). Also, some countries have improved significantly during the last 30–40 years (e.g. Chile, and Peru).

(Figure 4 here)

In developing countries, we are able to discern a variety of shrinking trajectories. Looking at regions in aggregate, we see that East Asia performed much better than Sub-Saharan Africa and Latin America– the latter two exhibiting similar patterns –by reducing the prevalence of economic shrinking rather than by achieving stronger growth. Figure 5 and 6 illustrate simulations of what GDP/cap levels and income convergence with the economically developed world respectively would have looked like for countries in sub-Saharan Africa and

Latin America had they mimicked the resilience to shrinking of Asia while keeping the factual magnitudes of growth and shrinking intact. Such scenario shows that poorer countries' income levels would be significantly higher and that the catching up of poor countries to the rich would not only be possible but also under progress. Although merely a simulation, it shows the significant impact of resilience to shrinking.

(Figure 5 and Figure 6 here)

Our framework can help us understand some of the forces that drive countries to build more resilient economies and, consequently, to foster convergence with the industrialized core. In the following section we explain where the framework comes from, what constitutes social capabilities and how to define them. Then, in Section 5, we measure social capabilities empirically by constructing an index that quantifies them in a sample of 26 developing economies.

4. Social capabilities: measurement and categories

Generally speaking, we can say that the set of elements that constitute capabilities can have a direct and dynamic impact on resilience to economic shrinking. It is therefore highly important to characterise these elements and test the hypothesis that better social capabilities improve resilience to shrinking.

Abramovitz famously discussed the pivotal role of social capabilities for catching up dynamics and long-term convergence and as such the concept has hitherto been restricted for discussing determinants of growth (e.g. Perkins and Koo 1995; Temple and Johnson 1998; Putterman 2013; Andersson and Andersson 2019). Although Abramovitz did not distinguish between growth and shrinking, it is clear from both his argument and hypothesis that the capability approach was intended for understanding *economic performance* over time and not an economy's prospects for short-term growth. As identified in the previous section, economic performance over time constitutes the net effect of the magnitude and frequency of both growth and shrinking. This implies that the social capability-hypothesis applies to both growth and shrinking. In particular, we argue, for the understanding of *resilience* to shrinking, which has shown to be a determining factor for a society's possibilities to accomplish long term prosperity. In addition, resilience to shrinking is a severely neglected aspect in the development literature. However, a complication with making empirical use of social

capabilities has been that "no one knows just what it means or how to measure it" (Abramovitz 1986: 388). Although Abramovitz might have underrated his own contribution on the matter, it is true that preciseness in on how to empirically capture the capabilities is lacking.

In our approach, we follow closely the ideas of Abramovitz as we single out our choice of indicators. Inspired by Kuznets, Abramovitz divided capabilities in two categories where the *first* related to the set-up of egalitarian incentives and effective political institutions while the *other* is associated with the ability in society to make use of new technologies (Abramovitz 1995). To make these categories tangible, resilience to shrinking depends in our framework on five interrelated, but distinct, elements of social capabilities. These are derived from Abramovitz' two broad categories just mentioned. The latter corresponds straightforwardly to (i) transformation of economic structures. The first, more complex, category we capture by the following four capabilities: (ii) broad-based inclusion of the population in the market, (iii) social stability, (iv) accountability and (v) the autonomy of the state.

Based on these, we develop a composite index to accommodate for the different dimensions of the social capabilities. These capabilities should be regarded as processes which reflect the forces that strengthen the resilience that can lead countries towards income convergence. Importantly, the capabilities that generate resilience to shrinking, may in and of itself provide further boosting of the same set of social capabilities. Hence, social capabilities and resilience to shrinking are both interactively cause and effect in the catching up process (cf. Abramovitz 1995: 39-40). Below, the capabilities, all of which are grounded in the development literature, are presented in more detail.

4.1. Transformation of the economy from agrarian to industrial activities

The growth path is marked by a process of structural transformation. Structural transformation entails changes in the composition of output and employment as an economy develops (Kuznets, 1973). The transformation of the agricultural sector leads the economy out of poverty by providing cheaper food to urban areas and releasing labour and capital that can be reallocated to the industrial and service sectors.

As this process of structural transformation takes place, the complexity of the economy changes. Economic complexity is understood by Hausmann et al. (2013) as the amount of productive knowledge that the economy contains. Economies dependent on a

single resource, usually non-renewable natural resources, are more exposed and vulnerable to a price drop or a slump in demand. Undiversified economies may therefore have a more volatile aggregate output, making potential investors less willing to venture into in superior technologies (Acemoglu & Zilibotti, 1997). Furthermore, more diversified economies have shown to be associated with more autonomous institutional settings (Olander 2019). Hence, economies able to produce and export a wide range of diversified, sophisticated and knowledge-intensive products are better prepared to overcome shrinking and avoid bottlenecks in their development process.

4.2. Inclusion of the population in the market

While structural change and the release of human resources from agriculture is an important avenue of growth in developing countries, there is no guarantee that labour will automatically be transitioned to higher value-added employment in industry and services (McMillan et al., 2014). It is also critical that losers of the transformation (people employed in sectors that are diminishing in size, typically agricultural or blue-collar workers) be connected to the growth process for it to be inclusive. This is even more important in contexts where strong social protection networks and competitive financial markets are absent, as labour market outcomes are the main determinant of economic welfare for most households.

The inclusion capability is characterised by broad-based economic participation of the population in the market, changing income distribution in favour of poorer households. This provides a more vital and competitive domestic market, with less risk of experiencing supply-side bottlenecks and less fluctuation in domestic prices. High inequality is potentially detrimental to sustained growth in many ways: it prevents the economy from making full productive use of human capacities, fosters growth-inhibiting social conflict and policies, and shortens growth spells (Alesina & Rodrik, 1994; Persson & Tabellini, 1994; Bourgignon, 2003; Berg & Ostry, 2011; Ostry et al., 2015). Pro-poor growth, on the other hand, raises the incomes of workers at the bottom of the distribution (Ravallion, 2004) and denotes a growth process that would be able to lift poor households above the poverty line (Dercon & Shapiro, 2007). This growth process in low-income countries is likely to be labour-intensive, typically engaging rural and relatively less educated labour. By fostering the participation of the majority of the population in the economic activity, thus making the most of available human resources, more inclusive societies are less likely to incur shrinking and more likely to enjoy dynamic, cohesive internal markets.

4.3. Autonomy of the state

Autonomy means the ability of the state to keep vested interests at bay. This implies the ability to impose direct and progressive taxation on the non-poor, while at the same time remaining sufficiently aligned with powerful actors (aristocrats, entrepreneurs, politicians, journalists, trade unions and other social organizations) to ensure a shared commitment to development policies and goals. Such autonomy resembles the concept of 'embedded autonomy' (Evans, 1995) and connotes a fine balance of simultaneous cooperating with and disciplining of powerful actors of society (see Acemoglu & Robinson 2019). Autonomy ensures credible commitment to investors or special interest groups and provides opportunities for the creation of consensual and representative government through 'revenue bargaining' between states and organised citizens (Brautigam et al., 2008).

This capability can be revealed in the monetary area of developed and developing countries. The end of the Bretton Woods in 1971 put an end to the convertibility of the US dollar to gold and made inflation a key policy area at the national level. The evidence between inflation and economic performance is mixed, but suggests that high inflation has a negative effect on long-term growth and can be seen as regressive taxation for those in the bottom of the income distribution (Barro, 1995; Erosa &Ventura, 2002). In the 1990s, many developing countries adopted a clear target for inflation rate as a response to the loss of inflation tax revenue (Lucotte, 2012). The process of implementing inflation targeting is a gradual process of economic and institutional reforms, which allows central banks to deal with difficulties in conducting their monetary policy, such as seigniorage and exchange rate pegs. Hence, a generally accepted bureaucracy of technocrats designs and executes the policy, while other branches of political power are not expected to dictate policy.

In sum, emerging economies that are able to control inflation will experience higher growth rates in the long run as states may improve their performance on tax administration and public provision. If this happens, building up such a capability may help to avoid recurrent shrinking behaviour by smoothing the downsides of the economic cycle.

4.4. Accountability

While autonomy of the state is necessary, it may not be enough to avoid arbitrary governance, abuses, waste and persistent inequality. Hence institutional quality also needs to be measured through accountability. This is understood as the quality of governance and provision of public goods (Besley &Persson, 2013). Accountability can be summarised as the ratio of social spending and social subsidies to GDP or to total government spending. In low-income countries, education and health investments are used as a measure of the state's 'collective' capacity (Besley &Persson, 2014).

Although the provision of public goods is central and may foster catching up and encourage political stability in developing countries, the social and political reach of such spending matters. Thus, the accountability capability can be captured by looking at real outcomes in population health, educational attainment, or infrastructure, which are the bulk of people´s demand in (non)democratic regimes. An appropriate measure would be life expectancy because it is considered a good general indicator of comparative success.

Indeed, life expectancy captures the various dimensions of the formation of human capital, such as access to health care, education, and the orderliness of urban living. In other words, life expectancy is the ultimate economic test (Sen, 1998). There is also a strong relationship between per capita income and life expectancy on the aggregate level, but closer inspection reveals that life expectancy in Costa Rica, for instance, is similar to that of the United States despite the differences in income level (Daniels, 2007). This implies that the social and political reach of government policies do influence the health–income relationship, and therefore countries that lack an open discussion of how spending is done in public health, education or infrastructure may be clear examples of low levels of accountability.

4.5. Social stability and democracy

Lastly, in recent decades the role of the state in ensuring law and order, dealing with social conflicts, guaranteeing the enforcement of contracts and supporting the functioning of markets has been emphasized (World Bank, 1997; Rodrik, 1999; North et al., 2009; Lin, 2012; Bardhan, 2016). Thus, the capability of social stability centres on success in conflict resolution (Rodrik, 1999; Collier et al., 2003; North et al., 2009).

In societies where social unrest is high, the government's ability to promote efficient economic and social policies maybe diminished because it has to put much effort in solving conflicts, leading to a higher likelihood of shrinking. Moreover, civil wars and other forms of

internal conflict can deter the willingness to invest, with a negative impact on growth (Jones & Olken, 2008). Another source of social instability is volatility of food prices, particularly in low-income countries (Dawe & Timmer, 2012), suggesting that resilience to shrinking can also be strengthened by food price policy.

5. The Social Capability Index in 26 developing countries

In this section we summarize the previous information on the five social capabilities by constructing an Index with the aim to understand how resilience to economic shrinking is shaped. Before we move forward and explain the methodology used to elaborate our measure, our sample and data sources are presented.

In order to analyse resilience in developing countries, we selected a sample of 26 countries from Africa, Asia and Latin America that were all considered developing countries at the start of the investigating period (1964[1]). The sample represents over 40 percent of global GDP and 60 percent of the world's population. The period of analysis covers the years from 1964 to 2018 (data unavailability refrains us from stretching further back in time). The following data sources were used to create the Social Capability Index: the Economic Complexity Index from the Economic Complexity Observatory (*transformative capability*); the disposable income GINI coefficient from Solt's (2020) Harvard database (*inclusion*); the rate of inflation from the IMF (*autonomy*); life expectancy from the World Bank's World Development Index (*accountability*); and the Polity 5 Index from the Center for Systemic Peace (*social stability*).[2]

In order to construct the Social Capability Index, we rank countries according to their relative positions within the sample of 26 developing countries in each year. Each capability provides a simple and transparent indicator. In each category, the Index has a value between 1 (best performer in each capability) and 26 (worst performer).[3] By obtaining a yearly ranking of each social capability variable, we produce an Index by year. Thus, our Index can be represented as follows:

$$Social\ Capability\ Index_{it} = Ranking_{it}[(Transformative\ Ranking_{it} + InclusionRanking_{it} + AutonomyRanking_{it} + AccountabilityRanking_{it} + Social\ StabilityRanking_{it})/5] \quad (1)$$

Table 1 shows the evolution of the Index by decade (based on the results of annual data), sorted by the score during the last decade. The table allows us to distinguish which countries improved overtime and which ones lagged behind. Over the whole period, the country with

the best social capabilities as measured by the Index was the Republic of Korea, which had the highest level of economic complexity and lowest inequality in the sample, moderate inflation, high life expectancy and social stability that improved significantly since the 1970s. Furthermore, 6 out of the top 10 countries are in East Asia. At the other end of the spectrum, Nigeria was the most vulnerable economy. Looking at the evolution of the Index (Table 1), there is a group of countries that clearly improved (Chile, China, Peru, Brazil and Thailand); others experienced a slight improvement (Ghana, Senegal, Indonesia, Philippines and Mexico); and some countries' capabilities worsened slightly (Argentina, Colombia, Kenya, Nigeria and Costa Rica). Finally, there is a group of countries that experienced sharp deteriorations (Madagascar, South Africa, Venezuela, Tanzania and Zambia).

(Table 1 here)

In sum, the Index allows us to track the relative position of countries within the sample, and how they improved/worsened their social capabilities. Below we proceed to analyse the relationship between social capabilities and resilience to economic shrinking between 1964 and 2018 in developing economies.

6. Resilience to economic shrinking: growth, frequency and magnitude

Our main hypothesis is that improvement in social capabilities (higher transformation of the economy, inclusion, autonomy of the state, accountability and social stability) helps to build up resilience to shrinking. Thus, countries with better capabilities may sustain their economic performance in the long run and converge with developed nations by avoiding the negative effects of shocks, which are of particular importance for emerging economies.

In order to test this hypothesis, we estimate the impact of having better social capabilities on the economic performance in its most basic form (GDP per capita growth), to have an overview of its effect; on the shrinking trajectory (in terms of frequency), to understand how its decline is triggered by better capabilities; and lastly on the magnitudes (of both shrinking and growing), to see whether the severity of crises is lower in countries endowed with better social capabilities.

To further investigate resilience to economic shrinking, we run two types of OLS regressions: one for the relative Social Capability Index and another for the five separate capability indicators that make up the Index. This is intended to distinguish any additional

pattern or information that may be missed by evaluating the Index in an aggregate manner. We acknowledge that these are correlations, not causation, and therefore endogeneity is an issue.

A. Economic performance

We start with simple linear regressions to understand the relationship between economic performance and social capabilities (measured by the Index we developed in Section 5). The data we use comes from the Penn World Table (PWT), version 9.1 (Feenstra et al., 2015). The data is annual for both variables (the Index and GDP per capita growth) and available for most countries between 1964 and 2018.

(Figure 7 here)

In Figure 7 we plot economic performance (from PWT data) and our Index in relative terms (a score close to 0 identifies the best performer, while a value of 1 is the worst performer). We distinguish that countries with low social capabilities have a much weaker economic performance than those with high social capabilities, between 1964 and 2018. Countries at the bottom of the social capabilities distribution are almost stagnant, while those at the top achieve annual average growth rates in the range of 3 to 4 percent. Table 2 confirms the clear association between social capability and economic performance: the better the score in the index, the more successful the economic performance.[5] Furthermore, the R-squared between values are close to 40 percent, suggesting that the model helps to explain differences in economic performance across countries rather than what happened within each country.

(Table 2 here)

From the previous discussion we can say that there is strong evidence that countries with worse social capabilities display a weaker economic performance than those with better capabilities. However, this does not help us distinguish which of the five capabilities that compose the Index may be driving this higher growth. Table 3 shows the OLS regression using the five variables separately in relative terms (0 means best performer and 1 worst performer). By looking at the coefficients, we can see that lower *transformation* (measured by the Economic Complexity Index) and lower *inclusion* (GINI) can push up annual growth rates

for this set of countries. Conversely, lower *state autonomy* reduces growth, virtually offsetting the 'positive effect of inequality'. These results show that less complex and unequal societies can experience higher overall growth. It makes sense that in less diversified, developing economies dominated by primary goods producers and commodity exporters, and where assets and resources are concentrated in the hands of a small elite, rent-seeking behaviours may lead to short-term economic growth. However, this does not provide any insight about the stability of such growth in the long run, which is the ultimate driver of convergence.

(Table 3 here)

Therefore, we need to check whether unequal and less complex economies can sustain growth in the long run. To do so, we run the same OLS regression, but taking the average growth rate by decade as the dependent variable instead of the annual growth rate[6]. Table 4 shows that the positive effects of complexity on growth disappears while the effect of inequality remains, but with a diminished level of statistical significance. This confirms that starting a process of economic growth and sustaining it in the long run are not the same (Hausmann et al., 2006; Jones & Olken, 2008). Countries may achieve short-term growth, but downturns can be recurrent, offsetting previous gains and in order to understand the sustainability of growth we need to take the role of resilience to shrinking into account.

(Table 4 here)

B. Frequency of shrinking

In this section, we assess whether better social capabilities drive long-term catch-up by reducing the frequency of shrinking. The literature on the topic has argued that the decline in the incidence of economic shrinking triggers long-run economic growth and convergence (Broadberry &Wallis, 2017). The measure used for frequency of shrinking is the number of times that each country registered a negative GDP per capita growth rate by decade.

(Figure 8 here)

To graphically illustrate this relation, figure 8 displays the share of frequency of shrinking by decade and the Social Capability Index by country between 1963 and 2018. This scatter plot shows that there is a positive correlation between worsening social capabilities and experiencing higher frequencies of shrinking: countries with worse social capabilities score an average frequency of around 40 percent while the frequency for those with better capabilities is lower than 10 percent (see table 5 for regression outputs).

(Table 5 here)

Results in table 5 reaffirm the role of capabilities in reducing the incidence of shrinking and promoting sustained economic growth. The coefficients here can be interpreted as follows: taking the results of column (2) countries with the best social capabilities such as South Korea (relative Social Capability Index=0.04) has a predicted frequency of shrinking of 1.57 percent (0.393*0.04=0.01572); on the other hand, countries with the worst social capabilities (near to 1) has a predicted frequency of shrinking close to 40 percent by decade (0.393*1=0.393). Hence, having relative high level of social capabilities makes a significant difference in terms of shrinking, and consequently affects long-term economic performance[7]. Dummy variables for each decade show, as expected, that shrinking was much higher in the 1980s in comparison with the 2010s, and to a lesser extent the 1990s, 1970s and 1960s. The fact that the dummy variable for the 2000s is not statistically significant may be a sign that shrinking was not very different than in the 2010s.

(Table 6 here)

Differences in frequency of shrinking are significant due to social capabilities in the long run, but this is also relevant on a yearly basis. As a way to understand how resilience is shaped in the short term, we decided to adopt an alternative approach – a Probit model with data based on an annual basis. Here, the measure of shrinking is all the times that a country went below 0 percent in GDP per capita growth rate. Thus, the dependent variable has a value of 1 if the country incurs shrinking and 0 otherwise. Running the Probit model with this variable and the yearly relative Social Capability Index (Table 6) shows that being at the bottom of the distribution (Index=1) significantly increases the probability of shrinking by 152.7 percent in that year. Conversely, the probability of shrinking for a country with an Index value of 0.1 (top 10 percent) increases by just 15.27 percent.

To sum up the results of this section, social capabilities help to configure the resilience to economic shrinking in developing countries. Improvements in the set of capabilities considered here enable emerging economies to suffer less from recurrent shrinking. The differences in shrinking –between being a highly endowed country with rich social capabilities and being socially backward in terms of capabilities – are noteworthy. Therefore, development of social capabilities can prevent countries from shrinking, empowering them to catch up in the long term. Differences are outstanding in the long term, but the probability of shrinking when a deterioration of capabilities takes place in the short run is also very large.

C. Magnitudes of growth and shrinking

To further comprehend how resilience to shrinking is shaped, we include here an analysis of the role of social capabilities in the severity of economic contraction (magnitude of shrinking) and in the size of growth periods (magnitude of growth). When talking about magnitude of shrinking we mean the 'size' of the negative rate (below 0 percent of GDP per capita annual growth) that a country experienced. On the other hand, the magnitude of growth indicates the positive rate (above 0 percent of GDP per capita) that a country experienced. We argue that social capabilities shape resilience to economic shrinking by reducing its frequency and also by smoothing the severity of crises. Severe and frequent crises would prevent developing countries from catching up, as countries that are converging would exhibit reduced rates for both of these terms. Additionally, as developing countries also have the capacity to grow, at least in the short term, the magnitude of growth between developed and developing nations would not be as high as the difference in shrinking. We test this set of hypotheses through similar OLS models as we did in the previous two subsections, but this time the dependent variables are both magnitudes.

(Table 7 here)

Table 7 shows in the first two columns that a lower Social Capability Index leads to deeper or 'more negative' shrinking rates. Columns 3 and 4 show that a higher Index value increases the size of growth rates ('more positive'), but its contribution is much lower than for shrinking (by looking at the size of its coefficients, comparing columns 1-2 versus 3-4). In sum, countries with lower social capabilities (in comparison with better-endowed countries) have greater shrinking rates *and* greater growth rates, although the effect of the magnitude of

shrinking is greater than the effect of the magnitude of growth in their overall economic performance. We also know that countries with lower social capability have a greater frequency of shrinking. This confirms that countries with lower social capability do not lack the ability to generate growth, rather the contrary. However, their resilience to shrinking is very low. This implies that social capabilities, by flattening the severity of shrinking both in terms of magnitude and frequency, rather than merely increasing growth, area key aspect for understanding the prospects of catching up[8].

7. Resilience to economic shrinking in the context of trade shocks

Social capabilities matter, and their development helps countries to suffer less from recurrent and severe downturns. The importance of capabilities for countries that tend to rely on exports of primary goods and commodities – as many developing economies do – could therefore be of a higher order. This would be the case when international trade enters into a global crisis, severely affecting emerging countries. These countries are then no longer able to place their products, or if they do, they earn less revenue than before. This kind of tension usually reduces the external gains from trade, limiting the resources that enter into the economy and restricting the potential for growth in countries that are highly dependent on external markets. In this context, social capabilities might be even more important. Economies with better capabilities (i.e. with more dynamic internal markets and stronger economic structures) would be able to adapt more rapidly and efficiently to shocks of that order, thus reducing the negative short-term impact and fostering convergence in the long term.

We aim to check if this happens and if resilience generated by social capabilities isolates the economy from shocks, which would be reflected in smoother shrinking patterns. Therefore, we include the role of terms of trade to our previous models that analysed shrinking and the effect of social capabilities. 'Terms of trade' refers to the relative price of exports in terms of imports, measured as the ratio of export prices to import prices. Its improvement means that a country can buy more units of imports per unit of exported goods. This way, terms of trade deterioration would certainly raise the risk of shrinking. The terms of trade data used here comes from UNCTAD's database.

Table 8 shows the results of including terms of trade in the Social Capability Index model[9]. The dependent variables are the ones used in Section 6 (GDP per capita growth, frequency of shrinking by decade, magnitude of growth and magnitude of shrinking). All estimations have two columns: the first one just includes the relative Social Capability Index,

while the second includes terms of trade in order to observe its effect on the objective variables.

In Panel A of the table we can see GDP per capita growth estimations. When including terms of trade (as a measure of shocks in trade), social capabilities are even more important. Thus, differences between countries with high and low capabilities are much greater in terms of growth (in fact, their coefficients double). Panel B shows that the effect of shocks is similar for the frequency of shrinking. It adds close to an extra 7 percent to the shrinking coefficient (an additional year of shrinking in a decade), which is a significant change considering that the mean frequency of shrinking is 23 percent for the 26 countries in the sample. This suggests that countries with better capabilities are more resilient and adapt better to external shocks. For the positive growth rates (Panel C), the coefficient of the Social Capability Index barely changes in the presence of terms of trade. This implies that countries with low social capabilities are also able to grow (in terms of magnitude), and the difference compared to countries with high capabilities is not as radical as for shrinking (as we saw in Section 6). In Panel D we see that social capabilities do make an important difference in terms of the magnitude of shrinking. While countries with low capabilities experience deep crises, the magnitude in countries endowed with high capabilities is much lower when drops in terms of trade take place (the change in the coefficient here is also large).

(Table 8 here)

Social capabilities act as a smoother or safety net for shrinking (in terms of frequency and magnitude). When considering terms of trade, deterioration of the price of developing countries' exports usually leads to lower growth or economic crises. However, if the country has better social capabilities, it will suffer less when such shocks take place.

8. Conclusion

Economic shrinking prevents developing economies from catching up with developed nations. Regions and countries that managed to converge did so by achieving long-term economic growth, based on developing resilience to economic shrinking. According to our analysis, the prevalence of shrinking clearly restricts the potential of developing countries to close the gap with developed countries. Although standard growth and catching-up literature acknowledges that achieving growth is not the same as sustaining it, the role of resilience to economic shrinking has still received very limited attention.

This paper aims to fill this gap by analysing the determinants of resilience to economic shrinking in the developing world, of which we considered a set of 26 emerging countries between 1964 and 2018. To this end we constructed an index based on social capabilities, inspired by Abramovitz (1986).

We find strong support for the notion that social capabilities matter in the construction of resilience to economic shrinking. Countries that build resilience based on these capabilities are less likely to suffer from frequent and severe economic crises in terms of GDP per capita. Countries with stronger social capabilities tend to shrink less over time, and when they do, the magnitudes are usually not very large, making economic recovery easier and convergence more probable. On the other hand, frequency and magnitude of shrinking are higher in countries with limited social capabilities, and this prevents them from catching up. While countries characterised by high social inequality and simple economic structures indeed have the ability to achieve growth in the short term, that growth is unlikely to be sustained.

Additionally, developing countries usually depend on revenues from exports and international trade, especially countries that have not managed to achieve strong structural transformation and have weak internal markets. Consequently, when international prices fall, developing countries are put under pressure as the threat of shrinking becomes more manifest. In this context the social capabilities, and the consequential resilience, seem even more important. Countries endowed with high social capabilities are able to mitigate external shocks and cope better with uncertainties.

From our results we can extract some policy implications for emerging economies. If sustainable development is the goal, countries should not necessarily aim for short-term economic gain. Instead, by building up social capabilities and resilience to shrinking, they have a better chance of achieving long-term convergence. Building resilience against

economic shrinking can conciliate economic convergence with other core values in society, such as stability, equality and care for the environment.

This paper suggests that social capabilities strongly influence resilience to economic shrinking in developing countries. However, this study is one of the first attempts to analyse this phenomenon; so far, we have only scratched the surface. Further studies may be pursued to better understand specific events in transitions from high- to low-frequency shrinking. The role of the export structure in promoting resilience to shrinking would be a fruitful avenue for further exploration, as would the questions of the driving forces behind the improvement in social capabilities and how resilience to shrinking can be incorporated into strategies for sustainable development.

References

Abramovitz, M. (1986). Catching up, forging ahead, and falling behind. *The Journal of Economic History,46,* 385–406.

Abramovitz, M. (1995). The elements of social capability. In B.H. Koo & D.H. Perkins (Eds.), *Social capability and long-term economic growth*. New York: St. Martin's Press.

Acemoglu, D. & Robinson, J. (2019). *The narrow corridor: States, societies, and the fate of liberty*. Penguin Press.

Acemoglu, D. & Zilibotti, F. (1997). Was Prometheus unbound by chance? Risk, diversification, and growth. *Journal of Political Economy, 105*(4), 709-751.

Alesina, A., & Rodrik, D. (1994). Distributive politics and economic growth. The Quarterly Journal of Economics, 109 (2), 465-490.

Andersson, J., & Andersson, M. (2019). Beyond Miracle and Malaise. Social Capability in Côte d'Ivoire and Senegal during the Development Era 1930–1980. *Studies in Comparative International Development*, *54*(2), 210-232.

Bardhan, P. (2016). State and development: The need for a reappraisal of the current literature. *Journal of Economic Literature, 54,* 862–892.

Barro, R., & Sala-i-Martin, X. (1992). Convergence. *Journal of Political Economy, 100*(2), 223–251.

Barro, R. J. (1995). Inflation and economic growth. *Bank of England Quarterly Bulletin*, pp. 166–76.

Baumol, W.J. (1986). Productivity growth, convergence and welfare: What the long-run data show. *American Economic Review,76,* 1072–1085.

Berg, A.,& Ostry, J.D. (2011). Inequality and unsustainable growth: Two sides of the same coin. IMF Staff Discussion Note (April 8).
https://www.imf.org/external/pubs/ft/sdn/2011/sdn1108.pdf

Besley, T., & Persson, T. (2013). Taxation and development. In *Handbook of public economics* (Vol. 5, pp. 51-110).

Besley, T.,& Persson, T. (2014). The causes and consequences of development clusters: State capacity, peace, and income. *Annual Review of Economics, 6,* 927–949.

Bourgignon, F. (2003). *The poverty-growth-inequality triangle*. [Paper presentation]. Conference on Poverty, Inequality and Growth, sponsored by the Agence Française de Développement and the EU Development Network.

Brautigam, D., Fjeldstad, O. H., & Moore, M. (Eds.). (2008). *Taxation and state-building in developing countries: Capacity and consent.* Cambridge: Cambridge University Press.

Broadberry, S., & Wallis, J. J. (2017). *Growing, shrinking, and long run economic performance: Historical perspectives on economic development* (NBER Working Paper No. 23343). Cambridge, MA: National Bureau of Economic Research.

Collier, P., Elliott, V.L, Hegre, H., Hoeffler, A., Reynal-Querol, M., & Sambanis, N. (2003). *Breaking the conflict trap: Civil war and development policy* (World Bank Policy Research Report). Washington, DC: World Bank and Oxford University Press.

Daniels, N. (2007). *Just health: meeting health needs fairly*. Cambridge University Press.

Dawe, D., & Timmer, C.P. (2012). Why stable food prices are a good thing: Lessons from stabilizing rice prices in Asia. *Global Food Security, 1*(2), 127–133.

Dercon, S., & Shapiro, J.S. (2007). Moving on, staying behind, getting lost: Lessons on poverty mobility from longitudinal data. In D.Narayan & P. Petesch (Eds.), *Moving out of poverty, vol. 1: Cross-disciplinary perspectives on mobility*, 77-126. New York: The World Bank and Palgrave Macmillan.

Easterly, W., Kremer, M., Pritchett, L.,& Summers, L.H. (1993). Good policy or good luck?, *Journal of Monetary Economics, 32,* 459–483.

Erosa, A., & Ventura, G. (2002). On inflation as a regressive consumption tax. *Journal of Monetary Economics, 49*, 761–795.

Evans, P.B. (1995). *Embedded autonomy: States and industrial transformation.* Princeton: Princeton University Press.

Feenstra, R. C., Inklaar, R., & Timmer, M. P. (2015). The next generation of the Penn World Table. *American Economic Review, 105*(10), 3150–3182.

Gerschenkron, A. (1962). *Economic backwardness in historical perspective.* Cambridge: Harvard University Press.

Hausmann, R., Hidalgo, C.A., Bustos, S., Coscia, M., Simoes, A.,& Yildirim, M.A. (2013). *The atlas of economic complexity: Mapping paths to prosperity* (2nd ed.). Cambridge: MIT Press.

Hausmann, R., Rodriguez, F., & Wagner, R. (2006). *Growth collapses* (Harvard Kennedy School of Government Working Paper No. RWP06-046).

Jones, B.F.,& Olken, B.A. (2008). The anatomy of start-stop growth. *The Review of Economics and Statistics, 90*(3), 582–587.

Kar, S., Pritchett, L., Raihan, S.,& Sen, K. (2013). Looking for a break: Identifying transitions in growth regimes. *Journal of Macroeconomics, 238*, 151–166.

Krugman, P. (1994, Nov-Dec). *The myth of the Asian miracle.* Foreign Affairs.https://www.foreignaffairs.com/articles/asia/1994-11-01/myth-asias-miracle

Kuznets, S. (1973). Modern economic growth: findings and reflections. *The American Economic Review*, 63(3), 247-258.

Lin, J. (2012). *The quest for prosperity: How developing economies can take off*. Princeton: Princeton University Press.

Lucotte, Y. (2012). Adoption of inflation targeting and tax revenue performance in emerging market economies: An empirical investigation. *Economic Systems, 36,* 609–628.

McMillan, M., Rodrik, D., & Verduzco-Gallo, Í. (2014). Globalization, structural change, and productivity growth, with an update on Africa. *World Development, 63*, 11–32.

Milanovic, B. (2016). *Global inequality – A new approach for the age of globalization.* Cambridge: The Belknap Press of Harvard University Press.

North, D., Wallis, J.J., & Weingast, B.R. (2009). *Violence and social orders: A conceptual framework for interpreting recorded human history.* Cambridge: Cambridge University Press.

Ohkawa, K.,& Rosovsky, H. (1973). *Japanese economic growth: Trend acceleration in the twentieth century.* Palo Alto, CA: Stanford University Press.

Olander, P. (2019). Economic diversification and institutional quality: Issues of concentrated interests. *Studies in Comparative International Development, 54*, 346-364.

Ostry, J.D., Berg, A.G.,& Tsangarides, C.G. (2015). *Redistribution, inequality, and growth* (IMF Staff Discussion Note SDN/14/02). International Monetary Fund.

Perkins DH., & Koo, BH. Introduction. In: Perkins DH, Koo BH, editors. Social capability and long-term economic growth. New York: St. Martin's Press; 1995. p. 3–10.

Persson, T.,& Tabellini, G. (1994). Is inequality harmful for growth? *The American Economic Review, 84*, 600–621.

Pritchett, L. (1997). Divergence, big time. *Journal of Economic Perspectives, 11*(3), 3–17.

Pritchett, L. (2000). Understanding patterns of economic growth: Searching for hills among plateaus, mountains and plains. *World Bank Economic Review, 14*, 221–250.

Pritchett, L., Sen, K., Karc, S.,& Raihande, S. (2016). Trillions gained and lost: Estimating the magnitude of growth episodes. *Economic Modelling, 55*, 279–291.

Putterman, L. (2013). Institutions, social capability, and economic growth. *Economic systems*, 37(3), 345-353.

Ravallion, M. (2004). *Pro-poor growth: A primer* (Policy Research Working PaperNo.3242). Washington, DC: World Bank.

Rodrik, D. (1999). Where did all the growth go? External shocks, social conflict, and growth collapses. *Journal of Economic Growth, 4,* 358–412.

Rodrik, D. (2011). *The future of economic convergence* (NBER Working Paper No. 17400). Cambridge, MA: National Bureau of Economic Research.

Rodrik, D. (2017). Premature deindustrialisation in the developing world. *Frontiers of Economics in China, 12*, 1–6.

Sen, Amartya. (1998). Mortality as an indicator of economic success and failure. *The economic journal*, 108.446: 1-25.

Solt, F. (2020). Measuring income inequality across countries and over time: The Standardized World Income Inequality Database. *Social Science Quarterly,101*(3), 1183–1199.

Temple, J., & Johnson, P. A. (1998). Social capability and economic growth. *The Quarterly Journal of Economics*, 113(3), 965-990.

The Center for Systemic Peace. (2020). Polity5 Project, Political Regime Characteristics and Transitions, 1800-2018. Retrieved from https://www.fraserinstitute.org/economic-freedom/economic-freedom-basics

The Fraser Institute. (2020). Data from Economic Freedom of the World: 2020 Annual Report. Retrieved from https://www.fraserinstitute.org/economic-freedom/economic-freedom-basics

The Growth Lab at Harvard University. (2019). "Growth Projections and Complexity Rankings, V2" [Economic Complexity Index]. Retrieved from https://doi.org/10.7910/dvn/xtaqmc

UNCTAD. (2020). United Nations Conference on Trade and Development. Retrieved from https://unctad.org/topic/trade-analysis/data-statistics-and-trends

World Bank. (2020). Worldwide Governance Indicators (September 28, 2020). Retrieved from https://datacatalog.worldbank.org/dataset/worldwide-governance-indicators

World Bank. (1997). *World development report 1997: The state in a changing world.* New York: Oxford University Press.

World Bank. (2017). *World development report 2017: Governance and the law.* The World Bank.

World Bank. (2020). World development indicators (WDI). Retrieved from https://datacatalog.worldbank.org/dataset/world-development-indicators

Endnotes

1. Argentina, Brazil, Chile, China, Colombia, Costa Rica, Ghana, India, Indonesia, Kenya, Madagascar, Malaysia, Mexico, Nigeria, Pakistan Peru, Philippines, Senegal, Singapore,South Africa, Sri Lanka, South Korea, Tanzania, Thailand, Venezuela and Zambia.

2. Summary statistics (Table 9 in the appendix).

3. Best-performing would mean to have the highest economic complexity (EC), lowest income inequality (lowest GINI coefficient), lowest inflation, highest life expectancy and highest social stability.

4. Table 10 in the Appendix shows how the Index is elaborated, by disaggregating the average of five categories for each country for the full period of analysis.

5. In order to avoid comparability problems of the index through time, we transformed it to range from 0 (top performer) to 1 (worst performer). In practice, best performers achieve a value of around 0.037 and worst performers a value of 1 (see summary statistics).

6. Note also that for the five independent variables (capabilities) we are considering their averages by decade.

7. Dummy variables for each decade show that shrinking was much higher in the 1980s in comparison to the 2010s, and to a lesser extent in the 1990s, 1970s and 1960s. The fact that the 2000s dummy is not statistically significant may be a sign that shrinking was not very different than the numbers from the 2010s.

8. The robustness of our models was tested in the section included in the appendix for that purpose. There, by switching some of the proxies in which the index is based on and extending the sample of countries (to 49 developing countries), we confirm that our results hold, economic performance and resilience to shrinking is shaped by social capabilities.

9. Note that due to the unavailability of older data on terms of trade, this model ranges only from year 1980 to 2018.

Appendix:

Table 1. Social Capability Index (1964 – 2018), by decade

Countries	1960's	1970's	1980's	1990's	2000's	2010's
Korea, Republic	5	9	2	1	1	1
Singapore	2	1	1	2	2	2
Costa Rica	1	2	3	4	10	3
Chile	6	15	16	11	6	4
Thailand	15	12	8	3	7	5
Malaysia	3	6	6	6	4	6
Mexico	13	10	14	12	3	7
Philippines	11	18	11	10	5	8
China	17	7	7	9	9	9
Argentina	14	11	9	7	8	10
Brazil	20	19	17	15	13	11
Peru	19	23	20	21	11	12
India	10	3	5	5	12	13
Indonesia	23	22	19	20	15	14
Colombia	12	13	13	19	16	15
Kenya	16	20	21	24	23	16
Pakistan	9	8	10	13	19	17
Senegal	21	16	15	16	14	18
South Africa	8	14	18	14	17	19
Sri Lanka	7	4	12	17	22	20
Venezuela	4	5	4	8	18	21
Ghana	26	24	22	22	20	22
Madagascar	18	17	24	18	21	23
Zambia	22	26	26	26	26	24
Tanzania	24	21	23	23	24	25
Nigeria	25	25	25	25	25	26

Note: Data from the 5 categories from which our index is based. Time period (1964-2018). The results here shown are an average of the annual score of each country by decade.

Table 2. OLS estimation, GDP per capita growth rate and S.C.Index

VARIABLES	(1) Growth Annual	(2) Growth Annual
Social Capability Index (0 top - 1 bottom)	-0.0295***	-0.0315***
	(0.0107)	(0.0106)
1960's		0.00853**
		(0.00420)
1970's		0.00195
		(0.00383)
1980's		-0.0102***
		(0.00383)
1990's		-0.000791
		(0.00384)
2000's		0.0106***
		(0.00384)
2010's		-
Constant	0.0401***	0.0399***
	(0.00630)	(0.00654)
Observations	1,396	1,396
R-squared (within)	0.006	0.036
R-squared (between)	0.3998	0.3971
Number of countries	26	26

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note : The results here shown are based on Fixed Effects (within groups estimators).

Table 3. OLS estimation, GDP per capita growth rate and 5 social capabilities

VARIABLES	(1) Growth Annual	(2) Growth Annual
ECI (ranking relative, (0 top - 1 bottom))	0.0317***	0.0317***
	(0.01000)	(0.00982)
GINI (ranking relative, (0 top - 1 bottom))	0.0307***	0.0257***
	(0.00924)	(0.00913)
Inflation (ranking relative, (0 top - 1 bottom))	-0.0249***	-0.0259***
	(0.00513)	(0.00504)
Life Expectancy (ranking relative, (0 top - 1 bottom))	0.00968	0.00924
	(0.0176)	(0.0173)
Polity 5 (ranking relative, (0 top - 1 bottom))	-0.00330	-0.00296
	(0.00556)	(0.00548)
1960's		0.0111*
		(0.00605)
1970's		-0.000509
		(0.00481)
1980's		-0.0155***
		(0.00461)
1990's		-0.00950**
		(0.00455)
2000's		0.00143
		(0.00452)
2010's		-
Constant	0.00385	0.0115
	(0.0118)	(0.0120)
Observations	1,052	1,052
R-squared	0.044	0.087
Number of Countries	26	26

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The results here shown are based on Fixed Effects (within groups estimators).

Table 4. OLS estimation, GDP per capita growth (Decade) and five social capabilities

VARIABLES	(1) Growth Decade	(2) Growth Decade
ECI (ranking relative, (0 top - 1 bottom)), by decade	0.0249	0.0207
	(0.0160)	(0.0146)
GINI (ranking relative, (0 top - 1 bottom)), by decade	0.0235*	0.0247**
	(0.0127)	(0.0116)
Inflation (ranking relative, (0 top - 1 bottom)), by decade	-0.0257**	-0.0261***
	(0.0106)	(0.00983)
Life Expectancy (ranking relative, (0 top - 1 bottom)), by decade	0.0301	0.0325
	(0.0262)	(0.0238)
Polity 5 (ranking relative, (0 top - 1 bottom)), by decade	0.00167	0.00242
	(0.00937)	(0.00854)
1960's		0.0129**
		(0.00606)
1970's		0.00411
		(0.00528)
1980's		-0.0116**
		(0.00486)
1990's		-0.00302
		(0.00486)
2000's		0.00845*
		(0.00476)
2010's		-
Constant	-0.00208	-0.00269
	(0.0180)	(0.0164)
Observations	132	132
R-squared	0.104	0.302
Number of country	26	26

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The results here shown are based on Fixed Effects (within groups estimators).

Table 5. OLS estimation, with fixed effects. Frequency of Shrinking (Decade) and S.C. Index

VARIABLES	(1) Frequency Decade FE	(2) Frequency Decade FE
S.C. Index (ranking relative, (0 top -1 bottom))	0.370**	0.393***
	(0.160)	(0.150)
1960's		0.0357
		(0.0485)
1970's		0.140***
		(0.0471)
1980's		0.227***
		(0.0468)
1990's		0.128***
		(0.0473)
2000's		0.0204
		(0.0471)
2010's		-
Constant	-0.00407	-0.110
	(0.0970)	(0.0903)
Observations	156	156
R-squared	0.040	0.253
Number of countries	26	26

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The results here shown are based on Fixed Effects (within groups estimators).

Table 6. Probit Model, annual shrinking.

VARIABLES	(1) Annual Shrinking	(2) Annual Shrinking
S.C. Index (ranking relative, (0 top -1 bottom))	1.527***	1.561***
	(0.185)	(0.191)
1960's		0.212
		(0.164)
1970's		0.605***
		(0.148)
1980's		0.844***
		(0.146)
1990's		0.557***
		(0.148)
2000's		0.174
		(0.154)
2010's		-
Constant	-1.692***	-2.167***
	(0.120)	(0.171)
Observations	1,447	1,447

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The results here shown are based on Fixed Effects (within groups estimators).

Table 7. OLS models with Magnitudes of Shrinking and Growth

VARIABLES	(1) Negative rates	(2) Negative rates	(3) Positive rates	(4) Positive rates
S.C. Index (ranking relative, (0 top - 1 bottom))	-0.0457**	-0.0505***	0.0245***	0.0188**
	(0.0180)	(0.0185)	(0.00818)	(0.00821)
1960's		-0.0121		0.0146***
		(0.00971)		(0.00298)
1970's		-0.00962		0.0114***
		(0.00858)		(0.00278)
1980's		-0.0156*		0.00546*
		(0.00809)		(0.00284)
1990's		-0.00593		0.00506*
		(0.00837)		(0.00278)
2000's		-0.00664		0.0113***
		(0.00920)		(0.00269)
2010's		-		-
Constant	-0.00405	0.00887	0.0264***	0.0215***
	(0.0121)	(0.0153)	(0.00462)	(0.00470)
Observations	319	319	1,077	1,077
R-squared	0.022	0.041	0.008	0.041
Number of countries	26	26	26	26

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The results here shown are based on Fixed Effects (within groups estimators).

Table 8. OLS estimation, effects of including Terms of Trade.

A. GDP per Capita Growth		
	1	2
VARIABLES		
S.C. Index (ranking relative, (0 top - 1 bottom))	-0.0444***	-0.0545***
	(0.0133)	(0.0135)
Terms of Trade		9.19e-05***
		(3.19e-05)
Constant	0.0473***	0.0427***
	(0.00783)	(0.00813)
Observations	988	978
R-squared	0.012	0.022
Number of countries	26	26

B. Frequency of Shrinking by decade		
	1	2
VARIABLES		
S.C. Index (ranking relative, (0 top - 1 bottom)) by Decade	0.337*	0.399*
	(0.196)	(0.210)
Terms of Trade by Decade		-6.73e-05
		(0.000514)
Constant	0.0266	-0.00112
	(0.117)	(0.119)
Observations	130	128
R-squared	0.028	0.038
Number of countries	26	26

C. Positive Growth rates		
	1	2
VARIABLES		
S.C. Index (ranking relative, (0 top - 1 bottom))	0.0292***	0.0251***
	(0.00958)	(0.00966)
Terms of Trade		6.11e-05***
		(2.31e-05)
Constant	0.0216***	0.0171***
	(0.00543)	(0.00576)
Observations	761	756
R-squared	0.012	0.021
Number of countries	26	26

D. Negative Growth rates		
	1	2
VARIABLES		
S.C. Index (ranking relative, (0 top - 1 bottom))	-0.0714***	-0.0862***
	(0.0221)	(0.0230)
Terms of Trade		9.70e-05*
		(5.00e-05)
Constant	0.0125	0.0102
	(0.0146)	(0.0147)
Observations	227	222
R-squared	0.050	0.072
Number of countries	26	26

Note: The results here shown are based on Fixed Effects (within groups estimators).

Table 9. Summary statistics:

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP per Capita Growth	2,601	2.23%	4.54%	-28.63%	51.86%
Frequency of Shrinking by decade	2,657	23%	21%	0%	100%
Shrinking year	2,699	22.71%	41.90%	0.00%	100.00%
Magnitude of Growth	1,988	3.97%	3.22%	0.02%	51.86%
Magnitude of Shrinking	613	-3.42%	3.49%	-28.63%	0.00%
Inflation	2,352	32.310	320.338	-8.423	11749.640
Economic Complexity Index	2,495	-0.389	0.677	-2.764	1.906
GINI, disposable	1,773	43.029	6.312	26.7	60.1
PolityV	2,480	0.947	6.644	-9	10
Life Expectancy	2,503	61.674	10.368	18.907	82.495
Government Effectiveness Index	980	-0.233	0.646	-1.582	2.437
Legal System & Property Rights Index	1,222	4.582	1.069	1.970	8.070
Terms of Trade	1,004	114.834	44.712	43.878	458.575
Social Capability Index, relative ranking, year (26 countries)	1,447	0.5793	0.2073	0.04	1
Social Capability Index, relative ranking, year (49 countries)	931	0.6083143	0.2126804	0.1058824	1

Table 10. Social Capability Index and Score by Capability, mean of 1964 – 2018.

	Transformation	*Inclusion*	*State Autonomy*	*Accountability*	*Social Stability*	*Capability Index*
Countries	**ECI**	**GINI**	**Inflation**	**Life Expectancy**	**PolityIV**	**Index**
Korea, Republic	1	1	6	5	11	1
Singapore	2	3	1	1	23	2
Costa Rica	6	13	14	2	1	3
India	5	10	9	18	2	4
Malaysia	8	16	2	6	14	5
China	4	4	5	10	26	6
Philippines	13	8	7	14	8	7
Thailand	12	11	4	11	12	8
Chile	14	20	10	4	4	9
Argentina	9	7	23	3	15	10
Mexico	3	21	16	7	13	11
Venezuela	16	6	26	8	7	12
Pakistan	15	2	13	17	17	13
South Africa	11	26	8	19	3	14
Sri Lanka	20	18	11	9	9	15
Colombia	9	23	19	12	5	16
Brazil	7	22	22	13	10	17
Senegal	18	14	3	22	19	18
Peru	17	24	17	15	6	19
Kenya	18	19	12	20	20	20
Madagascar	23	12	15	23	16	21
Indonesia	21	15	18	16	21	22
Ghana	25	5	24	21	18	23
Tanzania	24	9	21	24	25	24
Nigeria	26	17	20	26	24	25
Zambia	22	25	25	25	22	26

Note: Each category has a ranking. Last column “Capability Index” is based on the average score of all five categories. The value of the Index is the result of ranking that average of the five categories.

Table 11. Frequency of shrinking by decade, 1960s – 2010s.

Country	1960's	1970's	1980's	1990's	2000's	2010's	Ranking 1960 - 2010
Korea, Republic of	0%	10%	0%	10%	0%	0%	1
Thailand	0%	0%	0%	20%	10%	0%	2
Sri Lanka	14%	10%	0%	0%	10%	0%	3
Malaysia	0%	10%	20%	10%	20%	0%	4
Colombia	14%	0%	30%	20%	0%	0%	5
China	29%	20%	20%	0%	0%	0%	6
Pakistan	0%	20%	0%	20%	30%	0%	7
Indonesia	43%	0%	10%	20%	0%	0%	8
Singapore	14%	0%	20%	10%	30%	0%	9
Costa Rica	0%	20%	30%	20%	10%	0%	10
Philippines	0%	0%	30%	40%	10%	0%	11
Chile	14%	40%	20%	10%	10%	0%	12
India	43%	50%	0%	10%	0%	0%	13
Mexico	0%	0%	50%	10%	40%	13%	14
Tanzania	20%	50%	40%	20%	0%	0%	15
Peru	14%	30%	60%	20%	20%	0%	16
Brazil	0%	0%	50%	40%	30%	38%	17
Ghana	71%	50%	30%	0%	0%	13%	18
South Africa	0%	40%	60%	40%	10%	25%	19
Kenya	29%	20%	40%	70%	20%	0%	20
Argentina	14%	40%	60%	30%	30%	38%	21
Senegal	43%	50%	40%	50%	30%	13%	22
Nigeria	57%	40%	60%	50%	0%	38%	23
Zambia	20%	80%	100%	40%	0%	13%	24
Venezuela	14%	30%	60%	50%	40%	63%	25
Madagascar	14%	80%	70%	60%	30%	38%	26

Note: Frequency of shrinking by decade (times that GDP per capita growth went below 0 percent by decade), based on data from Penn World Tables 9.1. Last column shows a ranking based on the mean of all decades.

Robustness checks:

To test the strength of our previous results, we run some robustness checks. We test proxies for autonomy and accountability. Inflation as a measure of *autonomy* and life expectancy as a measure of accountability may confound the results because multiple causes may affect their evolution in the long run. The alternative measure of *Autonomy* is the Legal System and Property Rights index from the Fraser Institutes' Index of economic freedom. This indicator reflects the extent to which justice, legal systems and property rights are independent, unbiased, impartial and secured in different countries. This index ranges from 0 (lowest) to 10 (highest), from year 1970 to 2018. Additionally, the alternative measure of accountability is the Government Effectiveness measure from World Bank's Worldwide Governance Indicators (WGI), which reports data for 200 countries over the period 1996 and 2019. This Government Effectiveness index captures the quality of public and civil services, the quality of policy formulation and implementation and the credibility of government's commitment to such policies. This index ranges from -2.5 to 2.5.

The second aspect is sample size. Despite having full information between 1963 and 2018, the fact that our analysis is based on data from a relatively small number of countries (26 countries) could question the robustness of our findings. To address this concern, we extended our sample with 23 additional countries (Algeria, Bangladesh, Bolivia, Burkina Faso, Cambodia, Cameroon, Dominican Republic, Ecuador, Egypt, El Salvador, Guatemala, Honduras, Jamaica, Laos, Mali, Mauritania, Morocco, Mozambique, Nicaragua, Panama, Paraguay, Uruguay and Vietnam).

With these considerations, we created the new social capabilities index. Then we did two exercises: (i) we use the new index for the original 26 countries sample between 1996 and 2018 (note that our initial year is now 1996 as data for Government Effectiveness was not available before that). (ii) we extend the sample size to the 49 countries sample because of the loss of observations when reducing the period. Table 12 (see appendix) provides the results of the impact of the new index on economic performance. The first column displays the results for the original sample between 1996 and 2018. As we can see its significance has decreased, possibly caused by the fact that observations are fewer, but still showing that improvements in social capabilities improve the economic performance. In column 2, where we extended the sample, the relation between the two variables is reinforced.

Table 12. OLS estimation, Economic performance and S.C.Index

VARIABLES	(1) Growth Annual FE	(2) Growth Annual FE
New Social Capability Index (0 top - 1 bottom)	-0.0365*	-0.0416***
	(0.0207)	(0.0149)
1990's	-0.00933**	-0.00740**
	(0.00455)	(0.00315)
2000's	0.00498	0.00290
	(0.00389)	(0.00277)
2010's	-	-
Constant	0.0467***	0.0546***
	(0.0109)	(0.00882)
Observations	494	931
R-squared	0.046	0.030
Number of countries	26	49

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

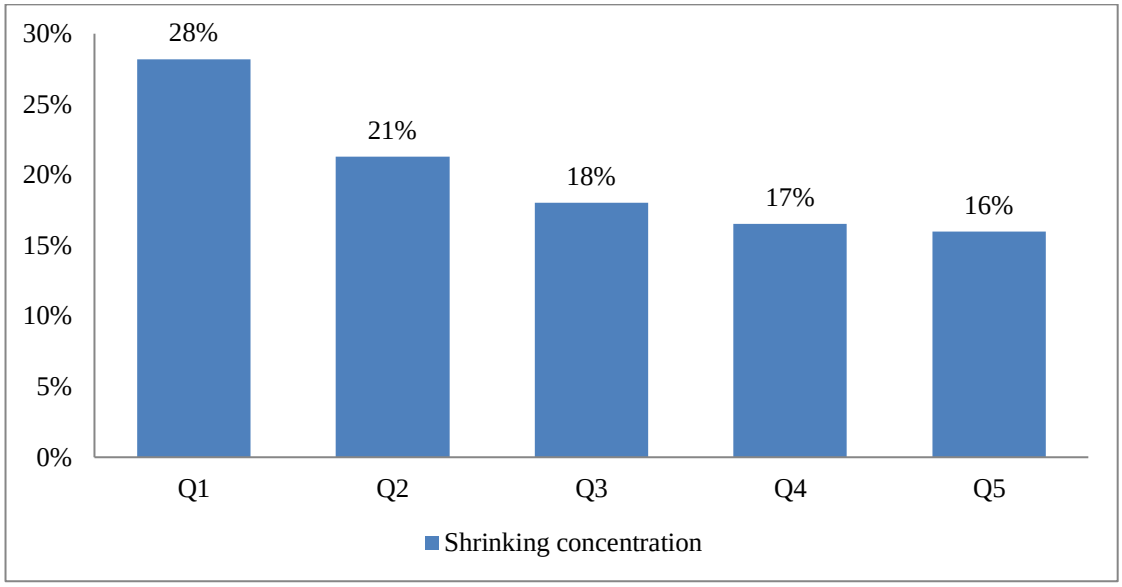
Additionally, table 13 confirms the relationship between frequency of economic shrinking by decade and the social capability index. The first column (fixed effects for the 26 countries) is not significant. If we consider the fact that there we just have 78 observations (3 observations per country) this is not unexpected. Moreover, when we extend the sample in columns 3 and 4 the results are significant. Comparing the results of this table from the ones of Table 5, it can be appreciated that coefficients are smaller. This makes sense due to the fact that during the period 1996 and 2018 economic shrinking in developing countries was lower than between 1963 and 1996. The last two decades (2000s and 2010s) were particularly good for developing countries in terms of shrinking and, as we just have information since 1996, those two decades reduce the size of the coefficients.

Table 13. OLS estimation, Frequency of Shrinking (Decade) and S.C. Index

VARIABLES	(1) Frequency Decade FE	(2) Frequency Decade RE	(3) Frequency Decade FE	(4) Frequency Decade RE
New S.C. Index (ranking relative, (0 top -1 bottom))	0.197	0.247**	0.302*	0.166**
	(0.202)	(0.103)	(0.171)	(0.0769)
1990's	0.132***	0.128***	0.145***	0.154***
	(0.0387)	(0.0360)	(0.0282)	(0.0263)
2000's	0.0207	0.0169	0.0458*	0.0516**
	(0.0385)	(0.0360)	(0.0269)	(0.0260)
2010's	-	-	-	-
Constant	-0.000362	-0.0283	-0.0905	-0.0117
	(0.117)	(0.0662)	(0.101)	(0.0500)
Observations	78	78	147	147
R-squared	0.288		0.321	
Number of countries	26	26	49	49

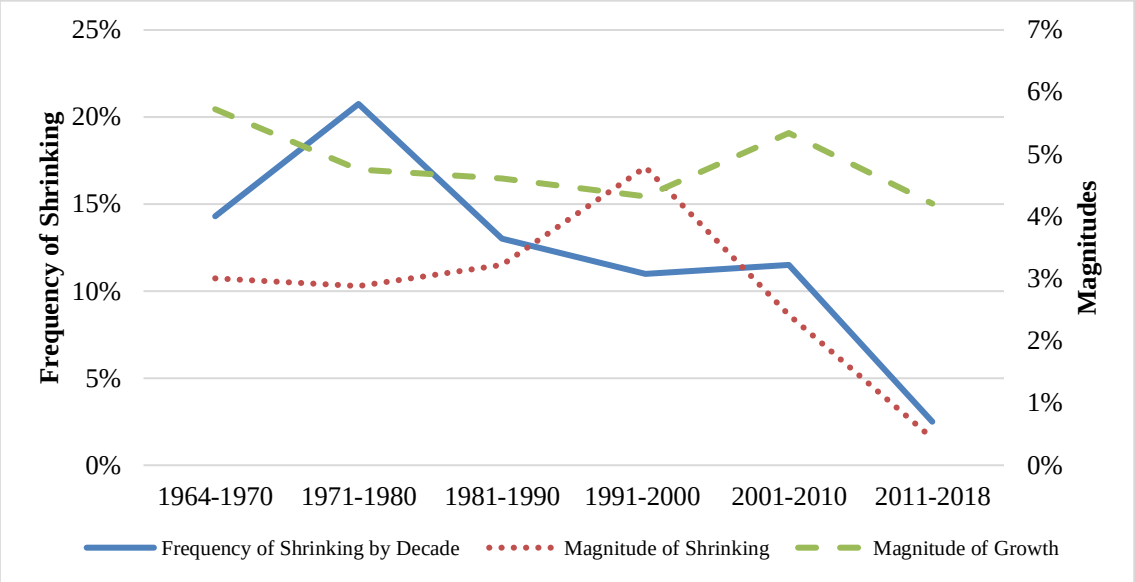
Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 1. Concentration of shrinking episodes, by year per quintile (according to GDP per Capita)



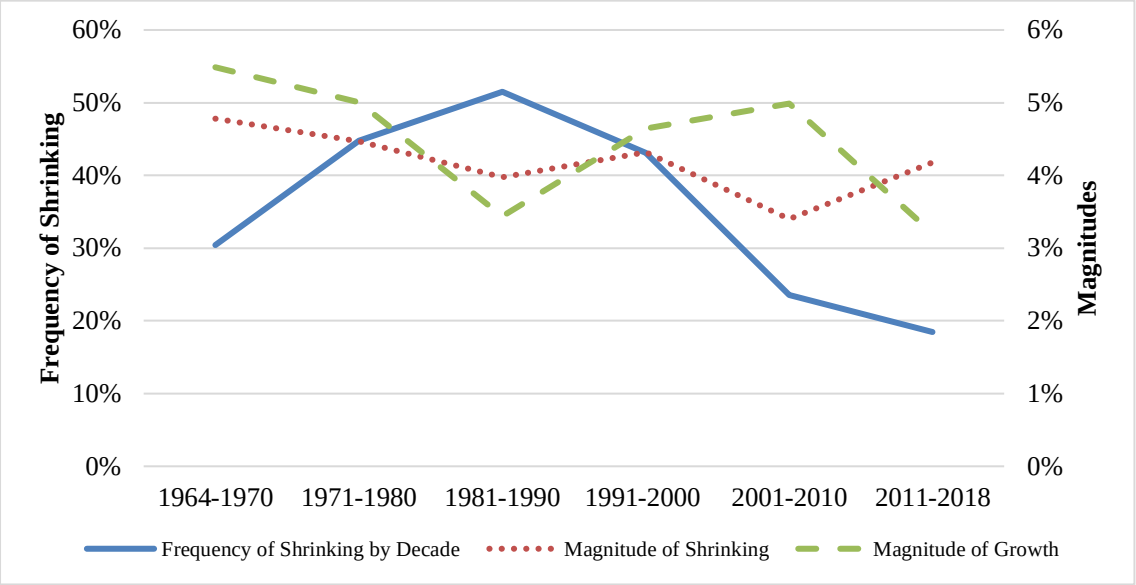
Source: Shrinking of GDP per Capita from PWT data. Quintiles were made in relation to the country with highest GDP per Capita every year. Interpretation: 28% means that on average, Q1 countries concentrated a 28% of shrinking episodes every year. Period: 1964 to 2018.

Figure 2. Frequency of shrinking and magnitudes: Asia



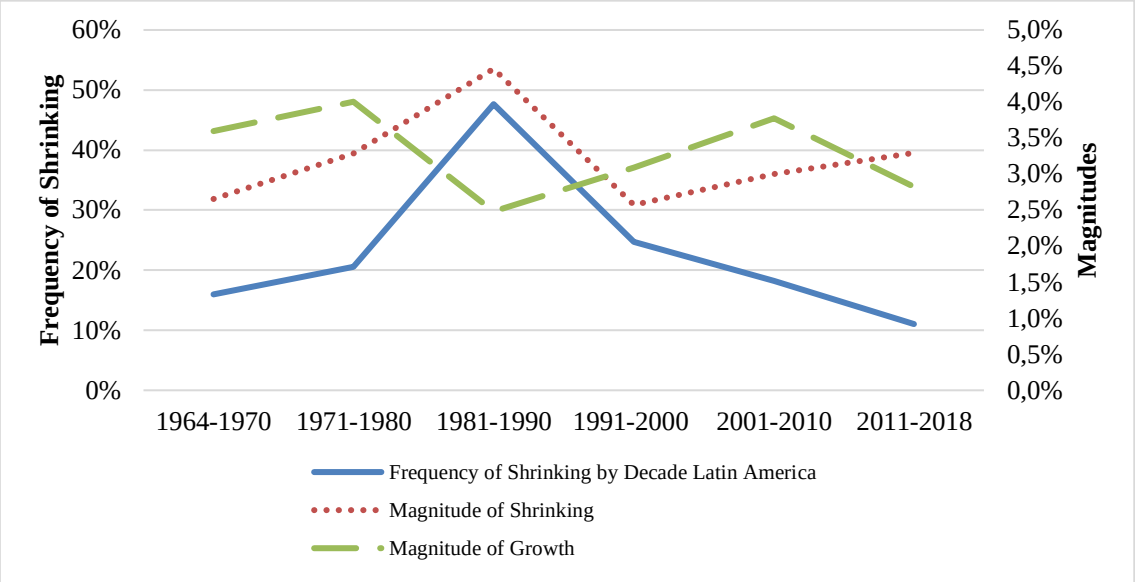
Source: Data from Penn World Tables version 9.1. Left axis: frequency of shrinking by decade. Right axis: magnitude of growth and shrinking. Countries: Bangladesh; Cambodia; China; Hong Kong; India; Indonesia; Japan; Republic of Korea; Laos; Malaysia; Maldives; Mongolia; Myanmar; Nepal; Pakistan; Philippines; Singapore; Sri Lanka; Thailand; Vietnam; Taiwan.

Figure 3. Frequency of shrinking and magnitudes: Sub-Saharan Africa



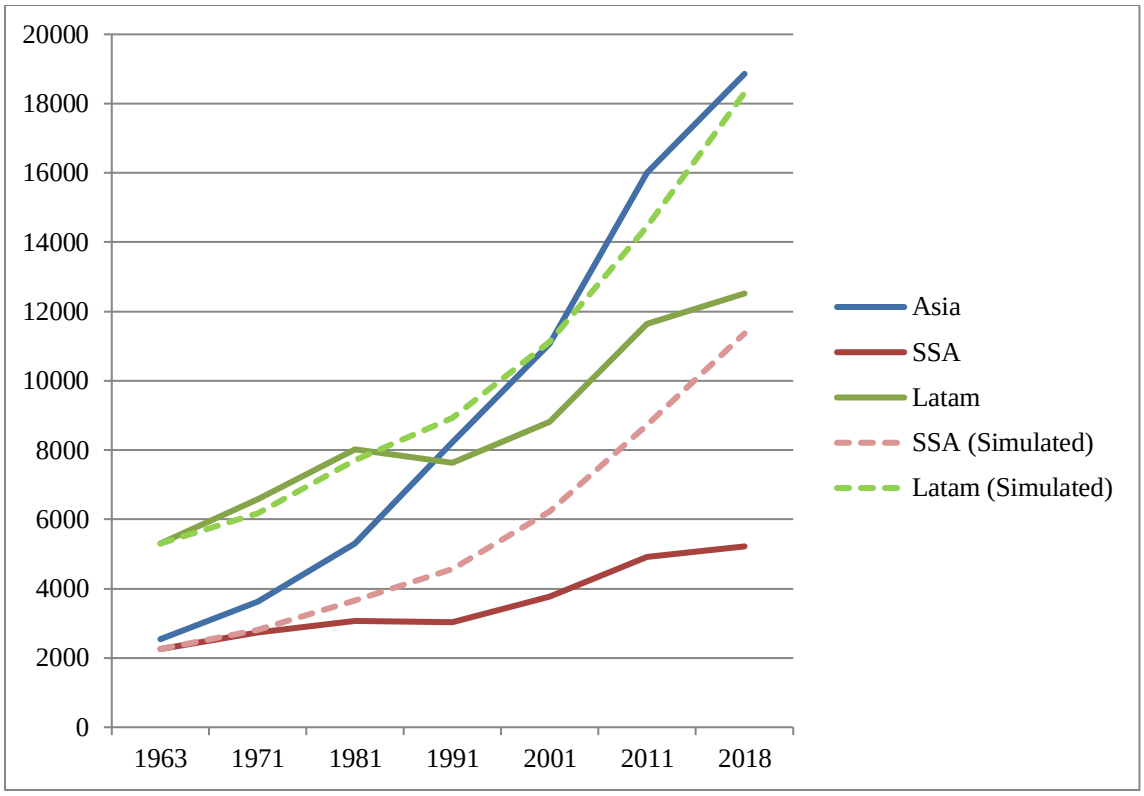
Source: Data from Penn World Tables version 9.1. Left axis: frequency of shrinking by decade. Right axis: magnitude of growth and shrinking. Countries: Angola; Congo, Republic of; Equatorial Guinea; Gabon; Nigeria; Benin; Botswana; Burkina Faso; Burundi; Cabo Verde; Cameroon; Central African Republic; Chad; Comoros; Congo, Democratic Republic of; Cote d'Ivoire; Ethiopia; Gambia, The; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritania; Mauritius; Mozambique; Namibia; Niger; Rwanda; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; South Africa; Sudan; Swaziland; Tanzania; Togo; Uganda; Zambia; Zimbabwe.

Figure 4. Frequency of shrinking and magnitudes: Latin America



Source: Data from Penn World Tables version 9.1. Left axis: frequency of shrinking by decade. Right axis: magnitude of growth and shrinking. Countries: Argentina; Bolivia; Brazil; Chile; Colombia; Costa Rica; Ecuador; El Salvador; Guatemala; Honduras; Mexico; Nicaragua; Panama; Paraguay; Peru; Uruguay; Venezuela.

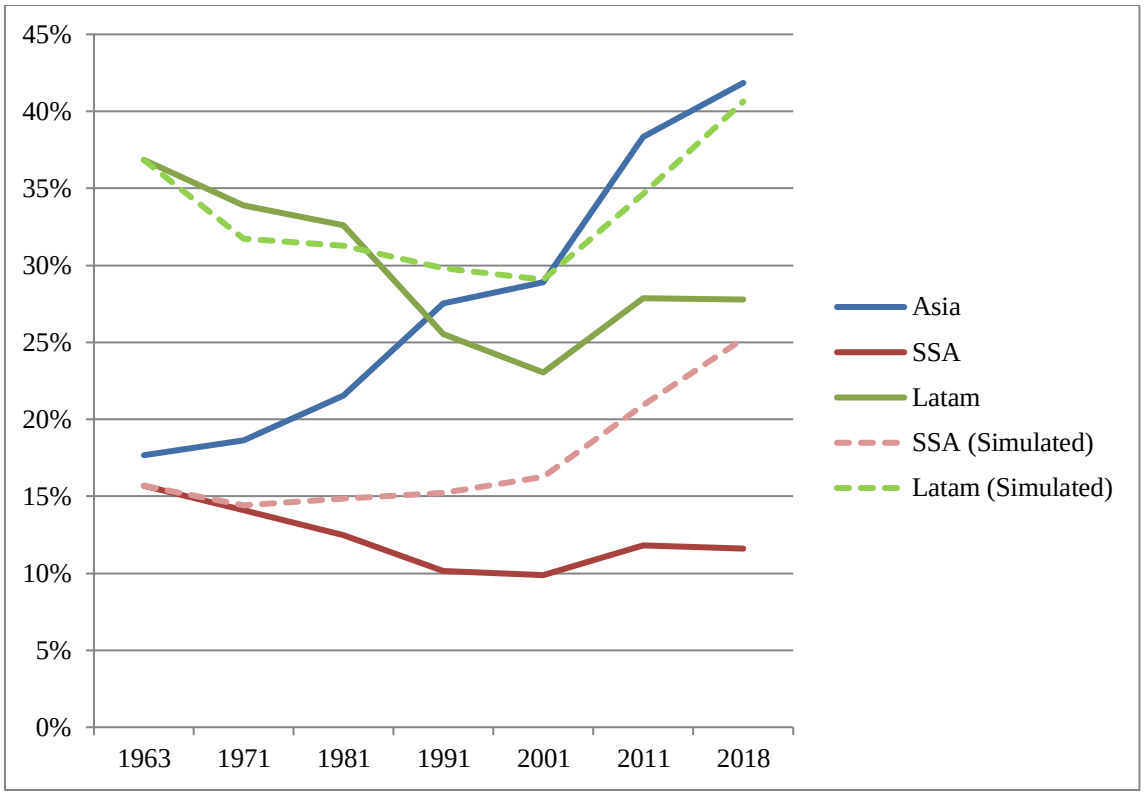
Figure 5. Simulation of GDP per Capita by region



Source: GDP per Capita from PWT 9.1. Simulations of Sub-Saharan African countries and Latin American countries were made taking Asian economies frequency of shrinking and keeping magnitudes of growth and shrinking of each region.

Countries: Asia (Countries: Bangladesh; Cambodia; China; Hong Kong; India; Indonesia; Japan; Republic of Korea; Laos; Malaysia; Maldives; Mongolia; Myanmar; Nepal; Pakistan; Philippines; Singapore; Sri Lanka; Thailand; Vietnam; Taiwan), Sub-Saharan Africa (Countries: Angola; Congo, Republic of; Equatorial Guinea; Gabon; Nigeria; Benin; Botswana; Burkina Faso; Burundi; Cabo Verde; Cameroon; Central African Republic; Chad; Comoros; Congo, Democratic Republic of; Cote d'Ivoire; Ethiopia; Gambia, The; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritania; Mauritius; Mozambique; Namibia; Niger; Rwanda; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; South Africa; Sudan; Swaziland; Tanzania; Togo; Uganda; Zambia; Zimbabwe), Latin America (Countries: Argentina; Bolivia; Brazil; Chile; Colombia; Costa Rica; Ecuador; El Salvador; Guatemala; Honduras; Mexico; Nicaragua; Panama; Paraguay; Peru; Uruguay; Venezuela).

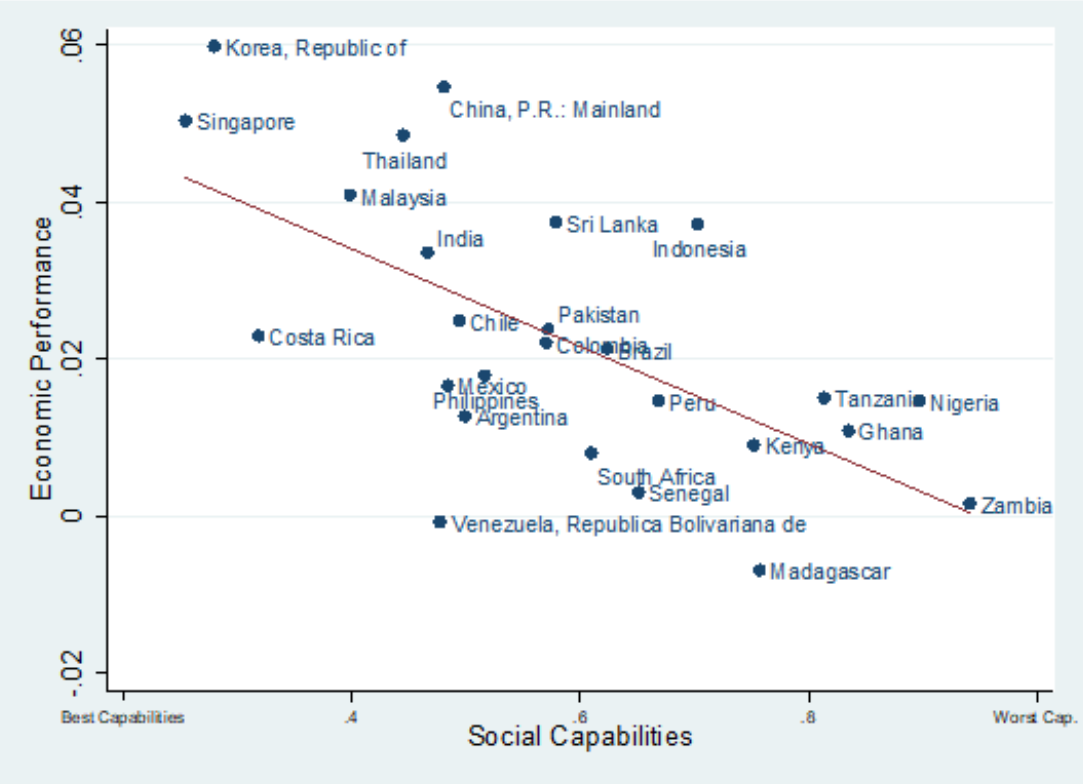
Figure 6. Simulation of GDP per Capita by region, relative to Developed countries



Source: Relative GDP per Capita from PWT 9.1. (1=GDP per Capita in Developed economies). Simulations of Sub-Saharan African countries and Latin American countries were made taking Asian economies frequency of shrinking and keeping magnitudes of growth and shrinking of each region.

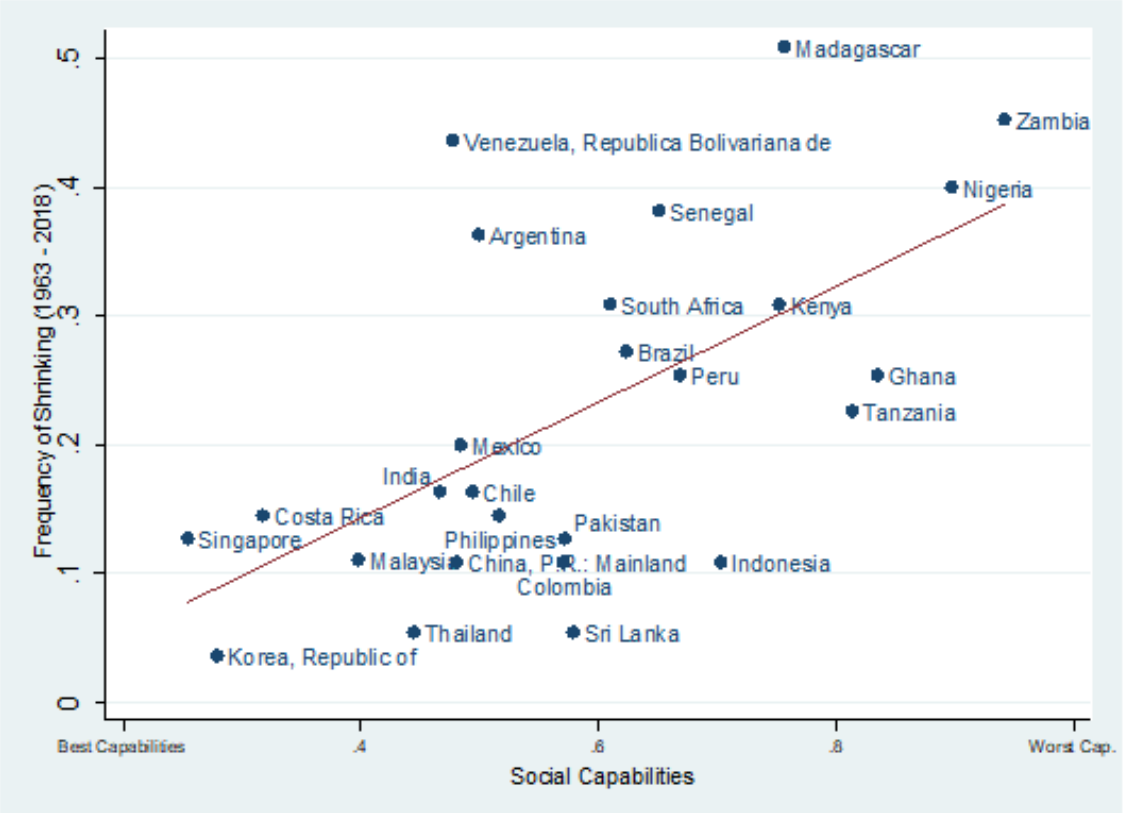
Developed (Countries: Austria; Belgium; Cyprus; Denmark; Finland; France; Germany; Greece; Iceland; Ireland; Italy; Luxembourg; Netherlands; Norway; Portugal; Spain; Sweden; Switzerland; United Kingdom; United States; Canada; New Zealand; Australia).

Figure 7. Relationship between economic performance and social capabilities (1964 – 2018)



Data: Social Capabilities Index, own creation; Economic performance based on GDP per capita growth, PWT 9.1. Average between years 1963 and 2018.

Figure 8. Relationship between Frequency of Shrinking by decade and Social Capability Index



Source: Social Capabilities Index, own creation; frequency of shrinking by decade, PWT 9.1. Based on decade data of both variables between 1963 and 2018.

Lund Papers in Economic History
ISRN LUSADG-SAEH-P--21/231SE+50

Orders of printed single back issues (no. 1-65)
Department of Economic History, Lund University
Postal address: P.O. Box 7083, S-220 07 Lund, Sweden
Telephone: +46 46 2227475
Telefax: +46 46 131585

Full-text electronic issues (no. 58, 60, 61, 66--)
www.ekh.lu.se

Lund Papers in Economic History are published by the Department of Economic History, Lund University, Sweden. This series replaces the former series under the title *Meddelande från ekonomisk-historiska institutionen, Lunds universitet*. The change of name reflects the orientation of the series towards an international readership. The series is multilingual, but the majority of the working papers appear in English.

Lund Papers in Economic History are published as occasion arises, not at fixed intervals. Printed issues are distributed to libraries. From 1999 and onwards, full-text electronic issues are also available on *www.ekh.lu.se.* Those who would be interested in receiving information by email on new issues of **Lund Papers in Economic History** are requested to send an email message to *Lund.Papers@ekh.lu.se.*

LUND
UNIVERSITY