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Research Report

Identifying future growth potentials: a consolidated approach

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Briefing Paper 15/2017

Identifying Future Growth Potentials: A Consolidated Approach

Summary

When Alice in Wonderland wonders which way she should take, the Cheshire Cat responds that it depends on *where* she wants to go! Researchers and policy-makers considering a country's long-term development path also have to know where *they* want to go. Typically, they seek to determine the realistic growth potentials for a country's economy and how to reach them, and identify the key assets that could make the country competitive and the economic sectors that should be prioritised to drive structural change. Most critically, they have to find out how to reconcile narrow goals regarding competitiveness and productivity with broader goals related to social inclusiveness and environmental sustainability.

The challenge is to design a methodology for evidence-based anticipation of future competitive advantages that merit industrial policy measures. The sectors that could create viable growth must be understood. Identifying a country's competitive advantage in five to 10 years presents a thorny methodological challenge and a complex set of factors to consider, including: available domestic resources, institutional capabilities, production costs relative to other countries, geographic conditions, the country's position within the global trade and investment system (including expected changes in relevant regulatory regimes), and also long-term shifts towards new technological domains. More often than not, the analytical, conceptual and institutional preconditions for such an exercise exceed the capabilities of developing countries and constitute a core area of advisory services provided by development cooperation partners.

Against this backdrop, we explore three aspects of possible methodologies:

1. The strengths and weaknesses of various contemporary methodologies, all of which fail to include important determinants of future competitive advantages. Since they do shed light on various complementary aspects, however, we suggest combining them to create a more complete picture of emerging opportunities.
2. The growing role of disruptive structural change. We are already confronted with radical and rapid structural change that impacts virtually all economic sectors and disrupts the prevailing techno-economic trajectory (seemingly the case for both decarbonisation and digitalisation). What are the methodological implications for predicting future competitive advantages? We recommend a stronger emphasis on using 'open' qualitative forecasting methods.
3. Evidence-based approaches for measuring competetiveness and anticipating its future direction must be embedded into a political economy framework that connects analytical tools to societal objectives and accounts for the different implementation capabilities of various countries.

Essentially, we argue that there is no 'silver bullet' methodology for predicting emerging patterns of competitiveness. However, a variety of tools can be used to reduce the number of promising options and inform policy-makers about how to exploit emerging opportunities.

Five key methodologies

Many different methodologies – ranging from concepts based on quantitative trade theory to qualitative tools derived from business management approaches – are used to identify future competitive advantages. This briefing paper focuses on five contemporary approaches that present specific measurable determinants of competitiveness; offer both a theoretical perspective and practical implementation tools for policy application; and have significantly impacted the economic development discourse. (For more details about these methodologies and their respective strengths and weaknesses, see Altenburg, Kleinz, & Lütkenhorst, 2016).

1. Growth identification and facilitation framework: Justin Lin and Celestin Monga build on David Ricardo's theory of comparative advantage. They assume that a country's resources (capital, labour and natural resources) are key predictors of its future competitiveness. They make this concept more dynamic by introducing the notion of latent comparative advantages and proposing that governments should promote those industries most likely to develop comparative advantages in the near future, as suggested by the history of successful comparator countries. They specifically recommend using the dynamic growth experiences of countries with similar endowment structures and no more than twice the level of per-capita incomes. In their view, overly ambitious goals that defy a country's current comparative advantages largely account for many misguided investments in the past (Lin & Monga, 2010).
2. Product space analysis: Researchers working with Ricardo Hausmann are building on evolutionary economic theory and focusing on how new technological capabilities gradually evolve from spillovers from existing capabilities: Clusters of competitive industries tend to emerge that build on similar sets of capabilities. That is, a country that is good at assembling garments is likely to be good at assembling shoes as well. In other words: A country's current export structure indicates other potential product groups with good export prospects. The more that assets and capabilities from 'nearby' products are capitalised upon, the easier it is to diversify a country's economic structure (Hausmann & Klinger, 2006).

These two methodologies share some characteristics, including one big advantage that makes them popular among development economists: They build on available datasets and provide an analytical formula that everyone can apply. However, they also have serious limitations. Firstly, they both extrapolate from the past and cannot account for changing conditions in global markets. Secondly, they provide lists of potential new export sectors or products irrespective of the specific country context: They do not capture institutional factors such as power relations in value chains or policy capabilities. Thirdly, they disregard the regional context and neighbouring countries. As Paul Collier (2007) remarked, a land-locked country surrounded by 'bad' neighbours has difficulty developing competitive industries. Finally, as a result of studying domestic factor endowments and capabilities, these methodologies risk making similar sectoral recommendations for different countries without factoring in what the world market can actually absorb (the 'fallacy of composition').

The following three methodologies are more qualitative:

3. Technological life-cycle approach: The Korean economist Keun Lee argues that the opportunities for latecomer economies to develop new competitive advantages are dependent on the characteristics, patterns and sequencing of technological life cycles. When technologies have short life cycles, new market entrants can capture new opportunities more frequently, entry barriers tend to be low and dominant incumbent firms often neglect new technological threats and continue to exploit their current innovation rents (Lee, 2013). For these reasons, relatively advanced middle-income countries in particular should strategically exploit technologies with short life cycles.
4. Value chain analysis: This approach (developed by various authors since the 1980s) delivers some elements of the required context specificity and indicates the real world conditions needed to successfully integrate into global inter-firm networks. Today, intermediate products and components account for more than half of the world's trade in goods and nearly three quarters of its trade in services – in global value chains that are governed by powerful lead firms who decide the rules of the game. Trade flows are essentially broken down into a multitude of smaller 'tasks' that can be unbundled and linked to infrastructure and skill requirements. However, for a particular industry in a developing country to become part of such value chains depends on a multitude of factors, many of which have to do with the lead firm's strategy and power resources.
5. Technology foresight: This approach (also established in recent decades by many different schools) takes a crucial additional step by adopting a principally open-ended perspective on the whole menu of technology choices. It draws on various tools used in participatory scenario building, acknowledging the need to reduce uncertainty by sharing knowledge through collective analysis and anticipating the future. Past development experience and current power constellations are not emphasized. Instead, efforts are made to systematically foretell the likelihood of new technological pathways.

Towards a synopsis of methodologies that builds on complementarities

Table 1 presents a comparative synopsis of these approaches and their defining features. They can clearly be seen as building on one another, adding complementary layers of analysis and reflection and thus lending themselves to sequential application. It is possible to generate an initial list of industries that are reasonable candidates for upgrading by first identifying their latent comparative advantages using

Table 1: Synoptic presentation of methodologies to identify future growth potentials

Highlighted determinants of diversification and upgrading	Growth identification & facilitation framework (Lin & Monga)	Product space analysis (Hausmann, Hidalgo, et al.)	Technological life cycle approach (Lee)	Value chain analysis (various authors)	Technology foresight (various authors)
Basic factor endowments and historical experiences of slightly more advanced countries	X				
Technological proximity to previous (export) capabilities		X			
Length of technological life cycles and intensity of competition with incumbents			x		
Power constellations within value chains affecting conditions for entry, upgrading and rent capture				x	
Data analysis, modeling and pooling of expert knowledge on 'likely futures'					x

Source: Authors

the historical experience of comparator countries, and then considering both the broader capabilities created and the potentials for technological spillovers. This could be considered as an evidence-based menu of options to be narrowed down using a 'reality check': Which candidates offer the best opportunities in terms of low entry barriers and limited competition from incumbents? Considering the power relations in global value chains, which industries stand a reasonable chance of insertion and upgrading? Only industries that exhibit long-term potential for sustained growth should be supported. A roadmap for a realistic development path could be designed by drawing on stakeholder knowledge to anticipate future technological trends.

The role of disruptive new technologies

Methodologies that essentially extrapolate from past technological trajectories may grossly misdirect policy-makers during disruptive structural change. In scenarios of a rapid, radical transformation of framework conditions, a premium is placed on embracing the future and a penalty on sticking to the past. Indeed, while many key dynamics of competitive integration into world markets remain largely unchanged, there are strong indications of more radical, disruptive changes emerging now and shaping the future. Two dimensions can be highlighted.

Decarbonisation: At present, the most fundamental paradigm shift arguably stems from global climate change imperatives and international agreements that commit all countries to decarbonise their economies by the end of the century – albeit to varying degrees. There may be significant benefits for developing countries that strategically position themselves as early adopters of low-carbon transformation.

Such benefits include the early acquisition of technological and managerial capabilities required for innovative low-carbon technologies, the generation of future export potentials in increasingly regulated markets (along the lines of measuring carbon footprints), and avoiding 'carbon lock-in' to technologies that are bound to decline and may soon be subject to de jure or de facto international bans.

Digitalisation: In addition to climate change imperatives, the various manifestations of the digital revolution are likely to give rise to fundamental ramifications. While the speed and magnitude of incipient changes are still subject to debate, it is clear that the patterns of international specialisation are being redrawn. Robots replacing humans may become a driver of 'reshoring' outsourced labour-intensive manufacturing operations, thus significantly reducing the scope of one of the most powerful ways to create competitive advantage for latecomer economies in recent decades. Other aspects of digitalisation, such as the growing roles of online marketing and digital finance, are expected to revolutionise markets and devalue some existing competitive advantages while creating opportunities for new ones. But it is hard to predict how concrete outcomes will affect specific firms and countries.

In essence, methodologies that place less emphasis on past experience and more emphasis on the 'open space' of future potential are a logical response to disruptive structural change. This creates a strong case for using qualitative participatory methods for double-checking the industries that are

identified as competitive by quantitatively analysing trade and production data.

Not just an afterthought: Political economy

Methodologies and their tools are never ends in themselves – particularly when determining future growth potentials. The practical tools are meant for policy application; they provide a technical basis to help policy-makers choose the right strategies and take the best decisions under realistic conditions. Invariably, these are normative and shaped by a multitude of broader societal goals that go beyond issues of competitiveness and growth. They may reflect both additional economic objectives (related to employment, income and asset distribution or the developmental impact of particular economic sectors) and further non-economic objectives (linked to social inclusion or environmental protection). A robust, structured process of societal dialogue and stakeholder consultation must be introduced into policy design, implementation and learning – a challenge as critical as it is difficult, particularly in low-income economies with weak institutional capabilities (Altenburg & Lütkenhorst, 2015). The manifold demands for smart industrial policy include three indispensable elements: agreement on a long-term national 'transformation project' that can ensure unity of purpose and coherence of action; use of competitive, market-based approaches to implement policy; and most importantly, the readiness to monitor and evaluate policy impact to stimulate learning.

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