One of the most interesting questions in development economics is why some countries were able to trigger and sustain a high performing, job-rich growth process, while many other countries were unable to develop such dynamic processes.

Economists still face serious knowledge gaps in providing answers to this question. The good news is that the recent debate in development economics is shifting focus from growth in GDP to catching up, structural transformation and economic development. And this debate is shifting analysis from markets to the pro-active role of governments. Most economists today would agree that Governments and industrial policies play a role in facilitating and supporting productive transformation in the economy. And more and more governments in developing countries – as well as in developed countries - formulate and implement industrial development strategies and new industrial policies.

This workshop is designed with a focus on middle income countries. Middle income countries aiming at promoting a high-performing and sustained process of catching up and development are challenged with two fundamental questions:

First, how to design high performing pathways of productive transformation that enhance the growth of productivity and productive jobs and how to accelerate such processes? Experience shows that developing countries differ in the patterns and pathways of productive transformation and that some pathways led to higher productivity and job growth, faster learning and more rapid improvement of living standards than others.

Second, how to sustain the dynamics of catching up and of learning in order to avoid falling into the middle income trap when approaching high income levels. Many middle income countries were able to grow, but when they approach higher levels of technology, more complex industries, and certain income thresholds, productivity growth and economic dynamics tend to decline. As a result only few middle income countries so far were able to drive through the middle income trap and move into advanced income levels.
More recently, development economics created a substantial body of research to provide answers to these questions. However, it must be acknowledge that this new literature has benefited substantially from ideas that have been developed in the past by evolutionary, structural and institutional development economists. The good news is that now both mainstream economists and the so-called heterodox economists contribute to the debate. This has opened the opportunity for different economic frameworks and empirical findings to be recognized and to influence industrial policy making.

In the following I will first present the main elements of a dynamic framework for catching up. This framework takes into account and integrates different strands of the new literature in development economics and discusses technological development, structural change, social capabilities and productive jobs as drivers of economic development. Second, I will discuss challenges that arise from this new and integrated framework and implications for “new industrial policies”.

I. A dynamic framework for economic development

The dynamic framework portrays catching up as the process of three interrelated processes: first, catching up is about creating and expanding productive capacities in the economy; second, it is about accumulating social capabilities that enhance the options and expand boundaries for productive transformation; third, catching up requires the creation of productive jobs with high values for growth and development.

1. Productive transformation – increase productivity and growth through structural and technological change

Productive transformation describes the process of structural and technological change in the economy. Productivity in the economy is enhanced by shifting production factors from low to high value added products and sectors, and by adopting advanced technologies within existing sectors and activities.

What do we know about productive transformation and the characteristics and patterns of structural and technological change that contribute to productivity and jobs growth in middle income countries?

Low and middle income countries grow and increase per capita income in a process of diversification of production and export structure rather than through specialization (Imbs, Wacziak 2003, Lederman, Klinger 2006, Lederman, Maloney 2007). This contradicts standard trade theories, but is in line with “old” development theories (List 1842, 1940s-1970s). Evidence shows that this pattern of productive transformation changes and countries begin to specialize again when they exceed about 9,000 US $ GDP per capita (in constant US$ 1985). Empirical studies show an U-shaped pattern of concentration with increasing diversification during the lower and upper middle income level, but declining concentration as countries approach advanced income levels.

The complexity of the goods produced and exported determines expected growth in middle income countries. Developing countries that export goods which are typically exported by developed countries – that is, complex products - are likely to grow faster (Hausmann, Hwang, & Rodrik, 2007). This suggests
that middle income countries accelerate growth by deliberately leapfrogging into sophisticated products and adopting technologies in leading paradigms that create steep learning curves and rapid catching up (Reinert 2009).

The sectoral structure matters for labour-productivity and growth. Manufacturing is traditionally argued to be the “leading sector” in economic development due to economies of scale and high learning effects (Kaldor). There is a substantial debate on the role of manufacturing as a leading sector, however, studies suggest that catching up in low and middle income countries has been driven mainly by structural change from agriculture to manufacturing (Ocampo, Taylor and Rado, 2009).

Evidence also shows that high growth in productivity and employment during the catching up phase can only be sustained when structural change towards manufacturing (and eventually also towards services) is combined with technological upgrading within each of the sectors. While growth-decomposition studies show that it is important to upgrade technologies within the agricultural sector (Ocampo, Rado and Taylor (2009), and within the industry sector (Kucera, Roncolato 2013 forthcoming), evidence from high and sustained growth countries shows that sectoral transformation from agriculture to manufacturing was combined with diversification of production within manufacturing from low to medium and high technology products (Nübler 2013 forthcoming).

Structural change, however, differs between regions. It has been productivity reducing in Africa and Latin America since the 1990s. Productivity-reducing effects in Latin America and Africa were due to large labor productivity gaps between the formal modern and the informal economy and a shift of labour from modern to informal economies (McMillan & Rodrik, 2011). Structural change enhanced growth in Asia where labor was moving from low- to high-productivity sectors. A recent study shows that shifts of low skilled workers from low productivity agriculture towards low productivity service sectors in the informal economy contribute to low increase in labour productivity in African countries (Sparreboom, Nübler 2013).

These findings demonstrate that governments in middle income countries have choices and that they can accelerate productivity and income growth.

2. Domestic capabilities – defining the space and competences for productive transformation/economic dynamics

The new debate in development economics, in addition to productive transformation, highlights social capabilities as a determinant of economic dynamics. Patterns of structural and technological change differ between countries, and social capabilities determine the options and boundaries of productive transformation within a specific country context.

Social capabilities relate to the ability of firms and the economy to produce new products and to apply new technologies. For example, China was able to develop a solar panel industry and to become competitive within only few years. The capability concept suggests that this was possible because it had
developed a social knowledge base, and a mix and a diversity of technical, commercial and general knowledge that provided the option space and competences for developing the solar panel industry.

The role of capabilities and how they are created need still further research, however, recent research in the ILO has undertaken conceptual and empirical research in this regard. A dynamic framework of catching up has been developed which distinguishes between three different spaces: the global product and technology space, productive capacities and social capabilities.

The global product and technology space defines the products and technologies which are mastered globally – by developing and advanced countries. Productive capacities define the range of products a country is able to produce given its endowment with production factors, infrastructure and the technologies. Productive capacities are enhanced by investment in production factors such as human capital, equipment, in new technologies, infrastructure. In contrast, capabilities determine what a country may possibly produce, however, is not producing yet. Capabilities are embodied in the knowledge base of societies, enterprises or the labour force, they exist at the collective level and they are accumulated through learning and experience.

Capabilities drive economic dynamics in two ways. First, they determine the feasible options for diversification, and the products and technologies which a country may be able to imitate. This option space is determined by the specific knowledge mix, and the variety and complexity of the social knowledge base. The specific mix is largely the result of learning in industries, in value chains and production networks, and the knowledge acquired in the formal school system. For example, education policies that promote only basic education to the neglect of secondary and higher education create a knowledge structure that has limited options to develop manufacturing activities.

Second, capabilities define the competences of a country or an enterprise to translate the options into investment and productive capacities. Competences are embodied in formal and informal institutions and in high-performing technological, managerial or coordination routines of enterprises. For example, formal institutions like tax laws may prevent enterprises to diversify even when the knowledge mix in the enterprise team provides the options. In value chains, quality standards support technology transfer from lead to sub-contracting firms and “competent” value chains provide such institutions.

The development of social capabilities cannot be left to the market because the value of options and of competences to take advantage of such options are not reflected in market prices. The market therefore will fail to shape social capabilities. This challenges Governments and developmental states to proactively support the accumulation of social capabilities for productive transformation.

In order to assess capabilities in a country-specific context and to inform policies on the options space and competences for feasible productive transformation, and how these options and competences can be expanded by policies, the concept of capabilities needs to be operationalized. This is work in progress at the ILO. We are currently elaborating several dimensions. We analyse educational structures as an important determinant of the social knowledge base and of options and boundaries for productive transformation. Second, technological knowledge communities are explored and how they provide
options for accelerated diversification. Third, infrastructure development is analysed in terms of public policies and institutions to enhance learning opportunities for domestic enterprises and the labour force. Finally, formal and informal institutions are analysed and how they support or hinder productive transformation in the informal economy as part of the overall productive transformation process. This research also addresses the important issue of middle income trap and the role of social capabilities in explaining the middle income trap.

3. Jobs, Employment and economic dynamics

The creation of more jobs and more productive jobs is a central objective of catching up and economic development. Productive jobs are created in the real economy, and they are the foundation for productive employment of the labour force. Productive employment contributes to higher wages, improved living standards and reduced poverty. Rising income levels also foster demand for locally produced goods and services which contributes to domestic growth. Furthermore, jobs are places of learning and they provide opportunities for workers to acquire skills and competences.

Jobs however differ in their developmental value. They have different implications in terms of gender, skills requirements, youth employment, rural income, learning and capability development. For example, jobs created in advanced economic activities and more complex technologies provide opportunities to the labour force to acquire advanced skills and competences to diversify into other products. This change in the mix of knowledge and competences in the labour force expands social capabilities and the option space for further diversification and structural change.

The nature of productive transformation and diversification patterns determines the nature of jobs generated, employment patterns and the contribution of jobs to economic development. Experience from developing countries shows that enhanced productive capacities, GDP growth and structural transformation are not automatically reflected in more productive jobs and increased employment opportunities. The pattern of structural change, investment and diversification, and the nature of technological advancement in enterprises determine the performance of the economy in terms of productivity and job growth.

II. The challenges for new industrial policies

The dynamic framework presented above portrays catching up as a process of three interrelated processes: productive transformation, the accumulation of social capabilities and the creation of productive jobs. This framework implies significant challenges for new industrial policies.

First, industrial policies are challenged with promoting the dynamics and co-evolution of the interrelated process of productive transformation, the accumulation of social capabilities and jobs creation. This requires Governments developing and implementing a vision of productive transformation as part of an economic development agenda. This perspective defines a wide scope for industrial policies and highlights individual and collective learning as a central objective of industrial
policies in addition to promoting investment in productive capacities, diversification, structural and technological change and to promoting the growth of productive jobs with high developmental value.

The patterns of structural and technological change affects productivity growth, the quantity and quality of jobs created, and learning and developmental outcomes. “What you produce matters”. Industrial policies therefore are challenged with supporting the evolution of productive transformation patterns and paths that help the country to achieve its development goals and society to meet aspirations.

These issues will be addressed in the panels discussing trade policy, investment policies and financing of economic and social transformation. Important questions are: How can industrial policies foster a process of catch-up growth and productive transformation patterns in lower and upper middle income countries that generates productive jobs, increases wages, incomes and decent work? What is the role of investment and trade agreement? What policy areas and measures should governments choose and combine to achieve the multiple goals of productivity increase, accelerated job creation and rapid learning for sustained economic development? There may be synergies and trade-offs, and Governments need to make choices.

Second, industrial development strategies need to be formulated in the light of social capabilities. Social capabilities define the options and boundaries for productive transformation, and these boundaries are country-specific. Governments therefore need to understand options embodied in the social knowledge structure and collective competences embodied in existing formal and informal institutions. There is no one-size fits all policy approach, and Governments need to understand which product lines and activities can feasibly be developed in the light of domestic capabilities. Countries even with similar factor endowment may have different social capabilities and suggest different patterns of diversification.

At the same time, Governments need to promote the accumulation of social capabilities. This implies close coordination of education, training and R&D policies with industrial policies in order to expand social capabilities in the direction which are required for implementing the vision of productive transformation and the catching up strategy. Furthermore, these different policies form part of a comprehensive learning strategy as they all are highly relevant in increasing the diversity and complexity of the social knowledge base and the option space for entry of advanced industries. In addition, Governments need to also develop “competent” formal and informal institutions that allow enterprises and countries to take advantage of options. “Smart” institutions are required to coordinate private and public sector activities, to enhance options in the informal economy, and it requires policies to create learning opportunities in more complex “infant” industries. Industrial policies is promoting private sector development by supporting capabilities and capacities of firms to search for new products, invest in advanced technologies, switch into advanced industries, learn from FDI and in value chains. In other words, investment, trade and technology policies need to provide opportunities for domestic enterprises to rapidly learn and to develop high performing technological and organisational routines.

These issues are addressed in the panels dealing with domestic capabilities. Important question are: What is the role of education policies in creating options for promoting structural transformation and advanced technologies? How can education policies shape a knowledge base that helps middle income
countries to move into more sophisticated technological regimes and into advanced income levels? How can infrastructure development policies and institutions support the accumulation of productive capacities, capabilities in domestic enterprises as well as employment? What is the role of formal and informal institutions in integrating the informal economy into a productive transformation process?

Finally, Governments are challenged with formulating and implementing industrial development strategies, creating collaboration among key stakeholders in public and private sectors and getting the industrial policy process right. In this context, many Governments need to strengthen industrial policy-making capabilities to tackle new challenges and to enhance the potential scope and effectiveness of industrial policies. This is highly relevant in many countries, in particular where the neglect of pro-active industrial policies during the past two decades prevented governments from gaining experience in the design and implementation of industrial policies.

This issue is addressed in the panel on government capabilities and capacities. Important questions are: how Governments in Africa, Latin America and Asia formulate and implement industrial policies, and how they can strengthen their policy making capabilities. How are the state and private sectors working together to promote new production, trade and job opportunities? Are there effective operational procedures and processes that foster consensus, cooperation and align incentives between public and private actors to achieve the goals of industrial policies? Are policy formulation and implementation procedures and institutions preventing political capture and limiting rent-seeking? What Government capacities and capabilities are needed for driving middle income countries into advanced income levels?