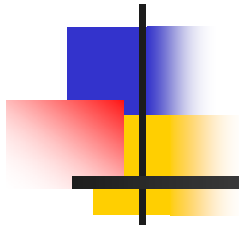


# **Knowledge-Oriented Diversification Strategies: Policy Options for Transition Economies**



**Presentation by Rumen Dobrinsky  
UN Economic Commission for Europe  
Economic Cooperation and Integration Division**



# Diversification in the era of globalization and knowledge-based development

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- **Intertwined processes of globalization and knowledge-based development**
  - Integration/re-integration of TEs into the world economy is part of the process of globalization
  - The production, distribution, and use of knowledge are the main drivers of growth, wealth creation and employment
  - The production, distribution, and use of knowledge have also become global phenomena: emergence of global knowledge-based value chains
  - Diversification strategies risk being non-sustainable unless they are oriented towards developing and promoting knowledge-based economic activities
- **The evolution and transformation in the dominant economic patterns imply changes also in the policy paradigm**
  - Policy has an important role to play for economic diversification to occur
  - However policy needs to take into account and address the specificities of the knowledge-based economy: “knowledge-oriented industrial policy”



# The nature of diversification

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- **Diversification is part of the development process**
  - Implies the emergence of non-traditional in that economy sectors/ industries/economic activities/products/services
  - As a rule implies deeper participation in the international division of labour – greater integration in the world economy
- **Diversification implies the emergence of new comparative advantage**
  - In a world of static comparative advantage diversification never happens: comparative advantage is given and is there to stay
  - However, we live in a world of dynamic comparative advantage
  - Past episodes of industrialization/diversification have been associated with changing comparative advantage
  - This is not always easy to trace in “revealed comparative advantage” (e.g. trade in differentiated goods is often recorded as intra-industry trade)



# Diversification in the era of knowledge-based development: The role of public policy

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- **At present diversification implies not just industrialization but mastery over knowledge-driven economic activity**
  - Sustained expansion of non-traditional economic activities
  - Key role in this of knowledge-driven economic activities
- **Diversification strategies call for an active public policy stance**
  - Past episodes of industrialization/diversification have been associated with the active role of public policy
  - However, due to the new dominant economic pattern, policies that have been used in the past (e.g. traditional industrial policy) are no longer relevant
  - Need for new policy approaches in the strife to achieve sustainable economic diversification



# Diversification and innovation as an entrepreneurial discovery process

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## ■ Diversification as a “discovery” process

- Rodrik (2004): diversification implies “discovery” of an economy’s underlying cost structure, i.e. whether new products will be profitable
- Entrepreneurs undertaking to produce non-traditional products discover what it actually costs to produce the product when producing it.
- The main problem: private costs in this process may exceed the social gains: If the entrepreneur fails, he bears the full cost of the failure; If he is successful, others can follow his example and share the gains
- The transmission channel is the “knowledge spillover” on the discovery: the possibility that the dissemination of this entrepreneurial knowledge may decrease its value for those initially in possession of the knowledge

## ■ Entrepreneurship in innovation

- Innovators face exactly the same entrepreneurial problem: If the innovator fails, he bears the full cost of the failure; If he is successful, others can follow his example and share the gains (private costs may exceed the cost of capital)
- The transmission channel is the “knowledge spillover” on the innovation



# Addressing the “knowledge spillover”: key in knowledge-oriented industrial policy

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- **The externalities of the knowledge spillover are equivalent to a knowledge-related market failure**
  - Private costs may exceed the social gains/cost of capital: in the absence of policy intervention, there will be underprovision of entrepreneurial activity in diversification activities and/or innovation entrepreneurship
  - Addressing the externalities of the knowledge spillover is an important rationale for policy intervention
- **The role of knowledge-oriented industrial policy:**
  - To contribute to the establishment of an enabling environment for development entrepreneurs and entrepreneurs in innovation to achieve a fair return on their investment



# Knowledge-oriented industrial policy: key underlying assumptions

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## ■ Consistent with evolutionary economics:

- The economic system is in a process of continuous evolution and change
- There is no steady state but rather multiple equilibria and transition is the rule
- Highly uncertain outcomes of economic behaviour
- The socio-economic context matters as well as judgment and experience matter for the behaviour of agents
- Incentives motivating different types of behaviour need to be bred
- Economic performance is prone to systemic failures (such as coordination, institutional, framework, network failures)
- Knowledge is more than information: it contains tacit and specific elements that cannot be formalized and diffused in the form of information
- Innovation requires interaction and technological cooperation among firms and access to new knowledge through collaborative networks



# The rationale for policy intervention in the knowledge-based economy

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## ■ Rationale and objectives

- Foster dynamic competitiveness of the economy
- Selectively address specific market failures; address knowledge-specific and systemic failures; coordination failures; capability failures
- Help market agents and other stakeholders jointly achieve mutually agreed goals
- Enhance connectivity between agents/stakeholders
- Help discover the nature and size of externalities and related remedies
- Help/coordinate market agents in jointly establishing acceptable “rule(s) of the game”
- Create an enabling environment for desired changes in the behaviour of market agents to happen; facilitating the transition to new behaviour
- Facilitate risk sharing among agents and stakeholders



## The rationale for policy intervention in the knowledge-based economy (cont.)

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- **Broader in scope but more modest in ambition than traditional industrial policy**
  - Policy needs to address a complex system of agents/stakeholders and their interactions
  - Outcomes are uncertain (multiple equilibria)
  - The state does not possess superior knowledge than market agents; it is only one of many “stakeholders” with whom it needs to work together
  - The state has superior capacity to coordinate and policy should draw on this
- **Knowledge-oriented industrial policy is “soft” and non-interventionist**
  - The language of action is toned down (to “facilitate”, “foster”, “encourage”, “promote”, “assist”, “establish an enabling/conducive environment”, “coordinate”)
  - Actions are aligned with the direction of market forces, facilitating – rather than counteracting – the smooth operation of markets (“pro-market activism”)



# Knowledge-oriented industrial policy: targets and expected effects

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<b>Traditional industrial policy</b>	<b>Knowledge-oriented industrial policy</b>
Factor inputs; outputs Firms, industries Specific sectors of the economy (vertical actions) The supply side of the economy/ producers Responses traceable to agents Distinctive response Measurable/quantitative responses to policy intervention	Systemic interactions Networks, systemic linkages Specific behavioural aspects across sectors (horizontal actions) Both the supply and the demand sides of the economy/ producer-user cooperation Systemic responses; behavioural additionalities Range of possible responses Some responses qualitative in nature



# The instruments of knowledge-oriented industrial policy

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- **Categories of policy instruments in relation to their knowledge functions:**
  - Instruments supporting/facilitating the generation of knowledge. Can be differentiated depending on the type of knowledge (codified, tacit, other).
  - Instruments supporting/facilitating the accumulation of knowledge (codified, tacit, other).
  - Supporting/facilitating the flows of knowledge (codified, tacit, other).
  - Instruments promoting knowledge spillovers and dissemination of knowledge.
  - Instruments promoting connectivity and coordination through knowledge sharing among stakeholders.
  - Instruments supporting/facilitating risk sharing through knowledge sharing among stakeholders.



# Financing instruments to support the generation of knowledge

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- **Specific features of knowledge-oriented instruments**
  - Shift from the direct institutionalized financial support to R&D institutions to the differentiated financing of specific R&D and innovation projects.
  - Project financing is often contingent on systemic networking among the participants or requires that linkages be established for the project to start (e.g. linkages between researchers from different institutions, between different R&D institutions, between R&D institutions and industry, etc.).
  - Project financing is usually allocated on a competitive principle through a selection among competing bids, on the basis of pre-specified criteria.
  - Apart from project financing, specific instruments involving a financing component have been developed to promote and support networking, linkages, partnerships, cooperation and connectivity among stakeholders of innovative ventures.



## Financing instruments addressing knowledge and information externalities

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- Usually perform several knowledge functions and also promote connectivity and risk sharing among stakeholders through knowledge sharing
- The main rationale for such interventions is to address knowledge and information externalities that tend to drive the private returns to investment in new knowledge or innovation below their social returns
- The economic rationale of providing public financial support to development or innovating entrepreneurs, contributing to economic diversification is not much different from that regarding the legal protection of intellectual property rights



# Financing instruments addressing knowledge and information externalities (cont.)

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- **Specific features of knowledge-oriented instruments**
  - Most instruments support start-up firms and ventures, not established and running businesses
  - The provision of funding is often organized on a competitive principle, through a selection among competing bids, on the basis of pre-specified criteria.
  - Financial support is of one-off nature to avoid lock-in into unviable ventures (“winners” are not selected in advance but ex-post, through survival on the market)
  - Public grant financing is especially instrumental in the pre-investment phase when the uncertainties are the highest
  - Most of the financing instruments contain by design built-in market elements and mechanisms (“pro-market activism”) and an appropriate incentive structure.
  - Addressing stakeholder connectivity is a key element (as implementation usually involves different types of stakeholders).
  - In some policy initiatives, the state takes up a leading role not only as a source of funding but also as a coordinator, helping in bringing together private stakeholders and in pooling financial resources for projects of joint interest (fundraising)



# Non-financial policy mechanisms for internalizing knowledge externalities

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- Rely on the superior coordinating capacity and convening power of the state
- The role of the public sector is not in providing financing support but in systemic coordination and facilitating linkages between potential key stakeholders (“information brokerage”)
- **Examples:**
  - Organization and/or support to R&D and technology oriented forums facilitating linkages among stakeholders
  - Public efforts and interventions to facilitate networking among potential partners from industry and/or R&D institutions
  - “Innovation intermediary” services that facilitate connectivity among stakeholders (e.g. technology transfer offices at universities)
  - Public knowledge services (support to the learning by entrepreneurs; support to the development of institutions providing advisory and technical services; awareness raising campaigns, etc.)



# Hybrid policy tools

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- **Incorporate a combination of policy instruments and perform different knowledge functions**
- **Seed-and-breed support institutions (e.g. business incubators) are typical examples:**
  - Combine financial, in-kind and/or other forms of support (e.g. the provision of coaching, consulting or administrative services)
  - Admission to the incubator is usually conditioned on a sound business plan and may include other criteria (e.g. the development of an innovative product or the commercialization of intellectual property).
  - Support is of one-off nature: at some point firms are expected to grow out of the incubator and take care of themselves; those that fail to achieve financial viability within the established time limits will exit the market
  - Perform important knowledge-centered function: contribute to the accumulation and diffusion of knowledge, especially entrepreneurial and managerial knowledge; facilitate knowledge sharing among incumbents; help in connectivity and networking both within the institution but also with the outside environment.



## Hybrid policy tools (cont.)

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- **Public-private partnerships (PPPs): address knowledge and coordination externalities**
  - A broad notion denoting various businesses operated through an agreement between the government and one or more private sector companies
  - Designing and running a PPP implies continuous knowledge- and information-sharing among the partners
  - By overcoming information and knowledge asymmetries among potential stakeholders PPPs help in setting up projects that would not have been in place in the absence of the policy intervention
  - Embody the “pro-market activism” approach: while risk is shared, the private sector entrepreneurship is usually leading in the venture
  - There is scope for public sector entrepreneurship in organizational experimentation



# The Role of the UNECE in promoting Knowledge-oriented industrial policy

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- **Committee on Economic Cooperation and Integration (CECI): Main focus areas**
  - innovation and competitiveness policies
  - entrepreneurship and enterprise development
  - financing innovative development
  - public-private partnerships
  - commercialization and protection of intellectual property rights
- **Work organized through Teams of Specialists and expert networks**
- **A broad multi-stakeholder policy dialogue through expert meetings, policy seminars, conferences, etc. with the participation of government experts, business and academic communities and NGOs:**
- **“Soft” regulatory work: synopses of good practices, guidebooks, policy recommendations and guidelines, etc.**

# The Role of the UNECE in promoting Knowledge-oriented industrial policy

United Nations Economic Commission for Europe

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**Creating a conducive environment for higher competitiveness and effective national innovation systems.**

*Lessons learned from the experiences of UNECE countries*

**Financing Innovative Development**

*Comparative Review of the Experiences of UNECE Countries in Early-Stage Financing*



UNITED NATIONS  
New York and Geneva, 2007



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# The Role of the UNECE in promoting Knowledge-oriented industrial policy

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