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'Club of Economics in Miskolc' TMP Vol. 9., Nr. 2., pp. 3-14. 2013.

Characteristics of the Dual Model among the OECD Countries – an FOI Model Analysis

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SUMMARY

Deciding on the development path of the economy has been a delicate question in economic policy, not least because of the trade-off effects which immediately worsen certain economic indicators as steps are taken to improve on others. The paper offers help to decide on such policy dilemmas, based on an analysis conducted among OECD countries with the FOI model (focusing on the future, outside and inside potentials). Several development models can be deduced with this method, from which only the dual model is discussed in detail. The dual model implies a development strategy focused on the attraction of outside resources, the instruments of which are also presented. The findings presented in the paper are part of a large OTKA (Hungarian Scientific Research Fund) study, which develops step by the step the methodology of the FOI model and discusses all of the development models found among OECD countries.

Keywords: development models; FOI model; dual model
Journal of Economic Literature (JEL) code: O11, O43, O57

GROWTH AND DEVELOPMENT IN ECONOMICS

Growth and development are mentioned almost as synonyms in this paper, although the literature usually addresses them separately. The simplest approach is to say that growth is the narrower, and development is the more complex class, as growth is usually defined as an increase in certain quantitative variables, while development describes a process of moving from a lower level of quality to a higher one (Szentes 2011). As the measurement of the phenomena economics usually deals with is problematic anyway, the most popular, formalised growthmodels (e.g. Domar 1947, Harrod 1948, Solow 1956, Romer 1986, Lucas 1988) concentrate on the national income or on its per capita version. These models therefore map the problem of growth/development through the quantitative change of a single indicator, so they offer tools to analyse the problem of growth, the narrower category.

The GDP however – being an aggregate indicator – veils more profound processes that are crucial for development, such as the structure of the economic system, changes in employment, income distribution or the institutional framework, etc. For this reason, from now on, we will use the more complex approach to development whenever we touch upon issues of growth and/or development paths, factors of growth and/or development, meaning that we interpret development as a combination of two things: growth in the indicators of national income, and the modernising of the socioeconomic structures.

Theories of Development

The different schools of economics have had different views on the rules of the economy, and they do not agree on the basic assumptions either; hence, a wide variety of theories have been developed over the centuries. While most schools implicitly assume that the models used are universal, List (1841) was convinced that the classical theories may only apply to the most developed economies; the followers of new institutionalism (see Williamson 2000, for example) point out that the institutional structure of different countries can be very different. A similar confrontation can be observed regarding the development paths. It is widely accepted that development is unilinear, meaning that all countries have to go through the same development stages (with timing being the only difference among them). Veblen (1919) on the other hand argued against the teleological approach of economics, and suggested an evolutionary one instead.

It worth mentioning that mainstream theories do not consider the effects of national interests and bargaining power in their models; heterodox schools on the other hand cannot accept the independent development of countries (although there is no agreement among them considering the exact nature of the interdependencies). It

may seem natural to choose the countries and national economies as the unit of analysis; Wallerstein (1974), however, when describing the economic history of medieval Europe, concludes that modernisation cannot be understood within the national economy framework. He chooses the worldsystem as the unit of analysis instead.

Some scholars have developed models with few explanatory factors; others have gone for more variables. The well-known growth theories pick one or two variables; Porter's diamond model (1990) combines four quite complex factors; the empirical study of Barro (1998) of 100 countries spanning over 30 years finds seven factors that are strongly connected to the growth rate of the real GDP.

The factors of development identified in the economics literature can be categorised along many principles, but the location of factors is probably the most important division line. One camp of economists traces back differences in economic development to reasons that can be found inside the country. They point to factors whose presence (e.g. physical or human capital) or lack (e.g. government failures) enables high growth rates. Another group of economists finds the causes of underdevelopment in outside factors. Usually these theories take the differences in the development level as given in the world economy, and they assume that these differences lead to asymmetric dependencies. The asymmetric dependencies on the other hand make it very difficult for underdeveloped countries to catch up with the rich world.The inside-outside distinction among the factors of development plays a crucial role in the model developed during our research.

The Inside Factors of Development

Adam Smith (1776) saw the division of labour as the main source of wealth. The countries that are able to extend the division of labour among their firms and citizens can become wealthier, as they are able to produce a higher quantity with the same labour input. The main finding of the Harrod–Domar model (1947, 1948) is that investments are the key to economic growth. Investments on the other hand are mainly dependent on the savings rate. Around a decade later Solow (1956) pointed out that investments and savings cannot contribute to growth in the long run. In his view, long-term economic growth is driven by technical change.

Keynes (1936) suggested crises are generated by limits in demand, and the latter may be strengthened by large income differences. The speculative demand for money of those who are well off can be especially high, which prevents a substantial part of the income from turning into effective market demand. Inequalities in income distribution thus can be a setback for balanced growth.

Schumpeter (1934) stressed that cyclical fluctuations should be regarded as a natural part of the economy, as entrepreneurs may only draw profits if they break the status quo of equilibrium. The way to break the status quo is through innovation, which therefore becomes the primary driver of the cyclical development. McClelland (1957) also emphasised the importance of the entrepreneurial class. In his view entrepreneurs are the pioneers of development, and their biggest motivator is not profit, but the achievement of some special goals (N-achievement).

When the big colonial empires collapsed, several academics explained the situation of the underdeveloped former colonies with a value system and social structure that was different from the Western one. In underdeveloped countries the rural characteristics of the society are dominant, meaning that labour is inefficient, immobile, the social structure is rigid, and the general attitude rejects individualism and risk taking (Meier 1964). When local values confront the Western values, the society is split into two groups, and a dual social structure is formed (Boeke 1953), which is completed with a dual economic structure as well (where the traditional and modern sectors are insulated from each other).

The role of human capital in growth and development is highlighted in various forms in the literature. Szentes (2011) quotes from A. Marshall: from a national perspective the capital invested in workers' children is just as productive as capital invested in horses or machinery. Newer theories unquestionably suggest that capital invested in children is far more productive than that invested in horses and machinery. Endogenous growth theories see increasing returns as a prime source of long- term growth, and they directly or indirectly explain increasing returns with human capital. Lucas (1988) treats human capital as a reproducible one, an element of capital that the society is able to broaden at a constant rate. The expansion of human capital, on the other hand, leads to a constant increase in the productivity of the physical capital. Romer (1986) also can be connected to human capital. In his model, investments made in research and development produce positive externalities that enable a constant increase in the productivity of physical capital.

Veblen (1919) points out that human behaviour is deeply affected by institutionalised rules of society. His views were taken over by new institutional economists (e.g. North 1993, Williamson 1998). According to them institutions affect the incentive system of an economy, while the incentive system on the other hand influences the behaviour, size and competition of firms, the level of investments and technological development, and so, ultimately the level of development of an economy. Underdevelopment thus is explained by institutional frameworks consisting of bad incentives, according to the new institutional school.

Partially connected to the institutional approach is the theory of government failures, which was mainly brought into the attention of development experts by Tullock (1993). It was back in the 1960es when Tullock

suggested (1967) that the super profit that monopolistic structures offer can be an incentive for firms to lobby for government regulations granting monopolistic positions and monopoly profits. According to calculations made by Krueger (1974), the rent seeking behaviour of firms in the field of import licences caused a 7.3% GDP loss in India, and a 15% GDP loss In Turkey in 1964. The more corrupt a country is, the weaker the state is, the heavier the costs of rent seeking are, and so rent seeking can be one of the major obstacles of economic development.

Porter's (1990) national competitiveness theory adds some highly complex factors to the literature of economic development. A somewhat similar idea is suggested by Freeman (1987), who developed the theory of national innovation systems. These systems are centred around cooperation among businesses, the education system and the research infrastructure.

The Outside Factors of Development

The theory of comparative advantage developed by Ricardo (1817) had become one of the cornerstones of the laissez-faire approach of international relations. According to Ricardo the highest welfare level can only be ensured if trade is conducted along the lines of comparative advantages, and there is a free flow of goods. This free trade principle was questioned by many. List (1841) argued against laissez-faire. He defended protectionism, and suggested protective tariffs for newly established industries (the infant industry argument). His suggestions echoed those of Alexander Hamilton (1791) made in the newly formed USA.

After the Second World War the focus of development economics shifted towards the power relations of different countries. Prebisch (1964) and Myrdal (1957) point out that underdeveloped states are dependent on richer countries, and so the current system of international division of labour is not based on comparative advantages. The internal economic structures of most of the developing countries are directly influenced by the developed ones through the colonial system (Myrdal: forced bilateralism). Balogh (1963) argues that as a result of power inequalities among parties, the economic structure of the developing countries has to be adjusted time after time to the changes generated by technical progress made in the developed economies, and the adjustment process prevents them from achieving longterm growth. The dependency relations lead to one-track specialisation (Singer 1964). The majority of exports of the developing countries are primary products and commodities, which leads to a decrease in the terms of trade over the long run. Bhagwati in his 1958 paper titled "Immiserizing growth" showed that the decrease in terms of trade can result in a decrease in the national income even if there is dynamic growth in the production of the export sector. One lesson learned from the literature of interdependencies is that a diversified export structure can be an important development factor.

Emmanuel (1972) has gone as far as claiming that trade between developing and developed countries is an unequal exchange, which is a manifestation of the imperialism of trade. Unequal exchange was triggered by wage differences, and is sustained by the immobility of labour. Wallerstein (1974) also accepted the concept of unequal exchange, though he argued that it is a result of the different bargaining power of nations. The core-periphery relations and the geographical position basically predestine the fate of nations, according to Wallerstein.

Table 1
Inside and outside development factors

Inside factors	Outside factors
Division of labour (Smith)	Free trade – international division of labour (Ricardo)
Savings rate (Harrod-Domar) Abundance-scarcity of capital	Protectionism Defence of infant industries (List)
Equal-unequal income distribution (Keynes)	Equal or unequal trade partners (Balogh) Pressure to fit to modern patterns (Balogh)
Drive to innovate (Schumpeter)	Unilateral dependency - diversification (Myrdal)
Entrepreneurial behaviour (McClelland)	One-sided specialisation (Singer)
Rigid-flexible social structure (Meier) Imported or organically developed social structures (Boeke)	Immiserising growth – terms of trade (Bhagwati) Forced bilateralism (Myrdal)
Dual-homogeneous economic structures (Meier)	International wage division-mobility of labour (Emmanuel)
Investments into human capital (Marshall) Human capital, as a renewable resource (Lucas) Positive externalities of R&D (Romer)	Geographical position – core and periphery (Wallerstein)
Institutional incentives (North) Path-dependent development	Investment strategies of multinational companies (Furtado)
Government failure (Tullock) Rent-seeking (Krueger)	Demonstration effect
National diamond (Porter) Innovation systems (Freeman)	
Rule of law, democracy (Barro)	

As the role played by transnational companies in the international flow of goods and capital became more and more dominant, a great deal of attention was directed towards them. Furtado (1970) suggested that the most important development factor is not the interdependencies among countries any more, but the investment strategies of transnational companies. Transnational companies can bring capital to a country, creating jobs, but the newly formed subsidiaries may be isolated from the local economy (Singer 1964). The ability of a country to attract foreign capital, especially if the capital is invested in fields that can fit in well to the

current economic structure of the economy, is another important development factor.

The demonstration effects of modern consumer societies are worth mentioning, too. Generally the consumers of the developing countries try to follow the consumption patterns of the developed nations. This usually has a cut-down effect on local growth, as the goods fitting to the most current consumption trends are generally produced overseas, so following the trends increases imports, and can contribute to the trade balance deficit.

The Role of Institutions in Development

According to the followers of the institutional school, institutions affect human behaviour, in other words they influence the decisions of economic agents. Veblen was the first to point that out (1919), and also added that it is an oversimplification to assume that market decisions can be analysed independently from any other outside factors, like family, culture, community, politics, etc. His views were neglected by mainstream economics, but the topic was brought into the forefront again by two new research agendas.

On the one hand it was proved by a series of psychological experiments that we are not capable of making such rational decisions as is assumed by economics. The notion of homo economicus was debunked by the theory of bounded rationality (Simon 1957). Agents with bounded rationality behave opportunistically. On the other hand Coase's pioneering article (Coase 1937) shed light on the fact that the transactions conducted among agents are not frictionless, and depending on the rate of frictions, very different market solutions may prove to be the most efficient ones. If we take a closer look at market transactions, it becomes clear that there are numerous social phenomena that are disregarded by mainstream economics, yet they influence the opportunistic behaviour of market agents and the rate of frictions during transactions. These social phenomena are collectively called institutions.

Hodgson defines institutions (2006) as systems of established and prevalent social rules that structure social interactions. According to the definition above, language, money, etiquette, the measurement system, and firms can all be regarded as institutions. Institutions make it easier to calculate and forecast the behaviour of agents, thus they contribute to the decrease of uncertainty and frictions during transactions. North (1993) offers a similar definition of institutions: institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction.

Williamson (1998) suggested a hierarchy that proved very useful during our analysis. He separated social analysis into four levels (Figure 1). The different levels are ranked according to the time needed to change them, but they also show what influences what in the society. Higher levels directly influence the level just below them, meaning that no practices may be adopted on the lower levels that are not compatible with the superior levels.

Social embeddedness is on top of the hierarchy (L1). Williamson puts norms, customs, ethical principles, traditions, conventions and religion into this category. Some development factors found in the literature at least partly belong to this level (e.g. the dual structure of the society, entrepreneurial behaviour).

The institutional environment forms the second level (L2). While the informal rules were placed in Level 1, the rules of L2 are formal, codified ones (e.g. constitution, laws, property rights). Although the change of Level 2 rules is also partly evolutionary in nature, calculated interference is also possible on this level (unlike on L1). Such interferences are called first-order economising, which is about finding the ideal combination of formal rules. Many of the development factors belong to the institutional environment: the rule of law, democratic rights, market regulation and protectionism.

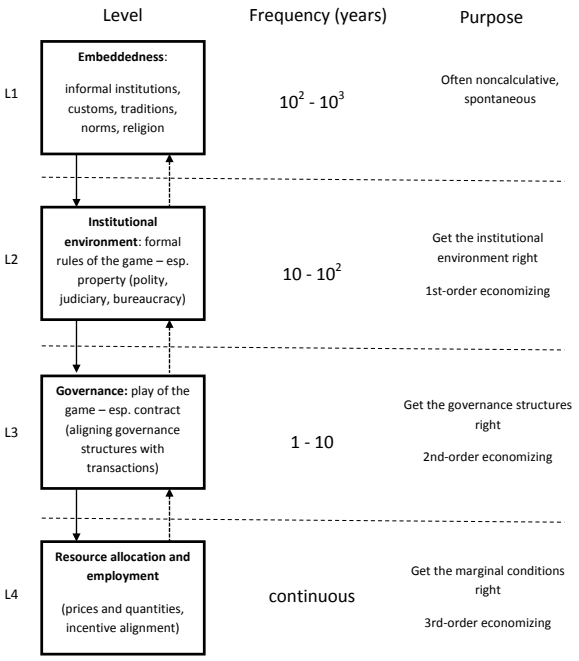

Figure 1. Economics of institutions (Williamson 1998, p. 26)

First-order economising, however, does not ensure the optimal economic structure. As agents behave opportunistically, they do not keep the formal rules of the economy all the time. Jurisdiction has also got its frictions, meaning that those who follow the rules are not able to enforce their rights against the opportunists instantly and without any costs. This is where the third level (L3) kicks in, called governance by Williamson. The unit of analysis in governance is the transactions made among economic agents, and the contracts mediating those transactions. Such development factors as the coordination of education and research, Porter's

national diamond, government failures or rent seeking, can all be reckoned among L3 items.

The final level (L4) is concerned with the allocation of resources, an area which is traditionally addressed by neoclassical economics. The factors of the better-known growth theories (quantities of labour and capital, savings, investments, etc.) all belong to this level.

Williams thinks that new institutional economics addresses problems belonging mainly to Levels 2 and 3. North's and Hodgson's definitions cited above, however, suggest that all phenomena belonging to L1, L2 and L3 can be regarded as institutions. This paper therefore treats all factors as institutional factors that can be categorised in one of the top three levels of Williamson's hierarchy.

METHODOLOGY

Structure of the Model

To identify the crucial development factors of Hungary, and in order to sketch potential development paths for the country, we developed the FOI model. The model is primarily based on the factors collected from the literature, but these factors are structured in a unique way which allows us to draw up characteristic development paths that can be clearly separated from each other. We used the following assumptions when the FOI model was set up:

- National economies are the unit of our analysis; international interdependencies are mostly disregarded in the paper.
- The key to development is not a single factor, but rather a combination of many factors. According to our assumption there are several important motors of development; sometimes these factors do influence each other, and it is very difficult to determine what causes what, still they can be equally important, and they all have to be used to draw up a potential development path for Hungary.
- Among the many factors considered in the model, the so-called institutional factors play a primary role. Institutional factors are detected using the hierarchy put forward by Williamson (1998). In fact the model was developed with the aim of stressing the importance of institutional factors in development.
- Development can take more than one shape and form. There are several feasible development paths, and Hungary is not constrained to only one of them, but may choose from a (limited) number of such paths. To determine these development paths, the FOI model was used to test the OECD countries.

The FOI model offers a new typology of development factors, but it is also capable of structuring these factors along three clear directions of development. As shown previously, the inside-outside typology of development factors is a standard part of the literature.The FOI model, however, is based on a three-dimensional structure. These three dimensions are:

- F, i.e. the future potential of a country;
- O, i.e. the outside potential of a country;
- I, i.e. the inside potential of a country.

All three dimensions are complex, composed of a large scale of factors. Yet they can still be clearly distinguished from each other, which is useful because the clear distinction can help in the formulation of distinctive development strategies.

The future potential includes factors that are regarded to be crucial for the sustainability and future competitiveness of the Hungarian economy. As sustainability has become one of the main paradigms of all social sciences, we felt that the inclusion of it as a separate development dimension was essential. In our case sustainability translates to ensuring that the typical signs and indicators of a developed country characterisenot only the current state of the economy but also the relatively distant future.

The outside potential includes factors that are crucial to the current world market position of Hungary. This second dimension can be treated as an equivalent of the outside factors listed based on the literature. Some of the elements of the outside potential may not be influenced from the inside; others, like the conditions affecting the international flow of goods, services and factors of production, are a standard part of economic policy.

The inside potential is made up of factors that are regarded to be crucial to the current well-being and development of Hungary. Most of the inside factors listed in Table 1 fall into this potential. Countries that offer favourable conditions to local entrepreneurs, and provide a high level of quality of life to their inhabitants, can have remarkable inside potential.

It is not difficult to spot that certain trade-offs exist among the three potentials. Higher wage levels, for example, are absolutely favourable from the perspective of the inside potential, but they can be dangerous for the outside potential of the country. They can also be threatening to the future potential, if the result of a high wage level is overconsumption. If a country is well endowed with natural resources, this can boost its inside and outside potentials, but the abundance of resources usually leads to high proportions of waste, which again harms the future potential. The three potentials were drafted with these trade-offs in mind.

Formulating a Measurement Method

During a brainstorming session a list of 50 indicators was compiled with the help of experts. These 50 indicators were chosen to measure the relevant development factors, and they were all included in a questionnaire. Experts were asked to rank all 50 indicators on a 1-7 scale (1=not relevant at all; 7= of

highest significance). Each indicator received three separate scores: one for future potential, one for outside potential and one for inside potential. The respondents had to give a high score to an indicator if they believed it greatly contributed to the sustainability and future competitiveness (F potential), current world market position (O potential) or current well-being (I potential) of Hungary. The questionnaire was completed by 28 experts. Most of them were active members of the Committee on Future Research of the Hungarian Academy of Sciences. Representing several academic fields (arts, engineering, medicine, natural and social sciences), they offered a wide perspective and a strong future-oriented attitude, values that are highly useful in this kind of research.

Table 2
The components of the future, outside and inside potentials

Future potential	Outside potential	Inside potential
Social responsibility (L1-3)	Trade to GDP ratio (L3-4)	Burden of government regulation (L2-3)
Industrial disputes (L1)	Country credit rating (L4)	Quality of life (L4)
Energy infrastructure (L3)	Exchange rate stability (L3)	Collected total tax revenues (L3)
Total public expenditure on education per capita (L3)	Financial institutions' transparency (L3)	Pension funding (L2-3)
Ageing of society (L1-2)	English proficiency (L4)	GDP (PPP) per capita (L4)
Renewable energies (L3)		Real GDP Growth (L4)
Healthy life expectancy (L3)		Ease of access to loans (L3)
Ecological footprint (L1-2)		Rigidity of employment (L3)
Total expenditure on R&D per capita (L3)		Labour force (L4)
Total R&D personnel nationwide per capita (L3)		Skilled labour (L3)
Educational assessment / Mathematics (L3)		

During the processing of the questionnaires every indicator was placed in the group (F, O or I potential) where it scored highest, meaning that an indicator could only be part of one of the potentials. In order to eliminate some of the less important factors (which received low scores in all three dimensions), we disregarded everything that had a score below average. The final transformation left us with 27 factors: 12 of them influence the future potential, 10 the inside and 5 the outside potential (Table 2).

The final version of the model was fine-tuned usingthe statistical data of the OECD countries.

THE FOI ANALYSIS OF THE OECD COUNTRIES

To quantify the future, outside and inside potentials, the FOI-indices were calculated. The value of the 27 components (listed in Table 2) were gathered for all 34 OECD members for the year 2010, and then all values were transformed to a 1-7 scale using the min-max method. By averaging the standardised values, we were able to calculate the F-, O- and I-indices of all 34 countries (Table 3).

Table 3
The F-, O- and I-indices of the OECD countries

	F	O	I
Australia	4.20	5.32	4.35
Austria	4.70	5.41	4.05
Belgium	3.90	5.56	3.47
Canada	3.90	5.41	4.50
Chile	3.80	5.03	4.13
Czech Republic	3.10	4.97	3.57
Denmark	4.80	5.77	4.30
Estonia	3.00	4.94	3.08
Finland	5.00	5.72	4.02
France	4.40	4.46	3.04
Germany	4.30	5.26	3.73
Greece	2.90	3.66	2.50
Hungary	2.90	4.56	2.55
Iceland	5.90	2.33	4.42
Ireland	3.90	4.17	3.91
Israel	3.60	4.89	4.13
Italy	3.50	3.82	2.66

	F	O	I
Japan	4.80	3.68	4.01
South Korea	4.00	4.26	3.33
Luxembourg	5.30	6.56	4.45
Mexico	2.70	3.98	2.85
Netherlands	4.40	5.54	3.83
New Zealand	4.20	4.52	4.00
Norway	5.20	5.70	4.13
Poland	2.90	4.42	3.07
Portugal	3.50	4.33	2.91
Slovakia	3.00	4.82	3.25
Slovenia	3.40	5.08	2.70
Spain	3.40	4.23	2.99
Sweden	5.10	5.22	4.13
Switzerland	5.40	5.37	4.89
Turkey	3.30	3.63	3.14
United Kingdom	3.90	4.35	3.60
USA	3.80	4.27	4.47

Factor Analysis

In order to better understand, what background factors drive the value of the different F-, O- and I-indices, a factor analysis was conducted with SPSS 19. Almost 150 variables were tested during the analysis. In the first step, we checked how closely related those variables are to the three index values in the OECD countries, and what the direction of the relationship is. As a second step, all variables were only considered in the factor analysis of the index they had the highest correlational relationship with.

We were able to establish three main groups of indicators that showed a significant correlation with the index of the future potential of the OECD countries. They were labelled Human capital, Accountable corporations and Quality of the education system. The Human capital factor is a combination of indicators measuring the education and health sectors, and the productivity. The Accountable corporations factor combines such factors as the ethical and social responsibility of organisations and the credibility of managers, and so it represents the social, ethical and environmental considerations of businesses. The third factor, Quality of education system, shows the returns on efforts made in the education system.

Two factors were found with the factor analysis of the O-index, namely National goodwill and Investment conditions. The main distinction between the two factors is the time frame within which their indicators may be influenced by the decision maker. The Investment conditions factor includes variables that can be influenced relatively easily, even over the short term; the National goodwill on the other hand may only be changed over the very long term.

Variables having a significant correlation with the I-index can be separated into three factors. These factors were labelled Business competitiveness, Government intervention and Availability of resources.The Business competitiveness factor measures the microeconomic position of all businesses (small and medium-sized enterprises and large corporations) along such dimensions as productivity, efficiency and R&D&I. The other two factors describe the macroeconomic environment of the businesses, where the Government interventions consists of the regulation part and the Availability of resources the allocation part.

Table 4
The factors of the F-, O- and I-index

F-index	O-index	I-index
F1 Human capital	O1 National goodwill	I1 Business competitiveness
Labour productivity (PPP) Overall productivity (PPP) Total health expenditure per capita Total public expenditure on education per capita Healthy life expectancy Total expenditure on R&D per capita	Parallel economy Investment risk Image abroad Country credit rating Brain drain Risk of political instability	Innovative capacity Productivity of companies Small and medium-size enterprises Information technology Large corporations
F2 Accountable corporations	O2 Investment conditions	I2 Government intervention
Ethical practices Social responsibility Credibility of managers	Foreign investors Exchange rate stability Capital markets Investment incentives State ownership of enterprises	Subsidies Finance and banking regulation Protectionism Legal and regulatory framework Ease of doing business Bureaucracy
F3 Quality of the education system		I3 Availability of resources
Educational assessment / Mathematics Educational assessment / Sciences Science in schools Educational system		Labour force Total primary energy supply per capita Burden of government regulation Employment rate Gross domestic savings

F-index: KMO=0.823, explained proportion 76.4%; O-index: KMO=0.803, explained proportion 73.7%; I-index: KMO=0.791, explained proportion 73.408%[1]

Forming Clusters

The FOI-indices and the factors determined during the factor analysis were used to identify typical clusters within the OECD countries. These artificial clusters were created based on the values of the F-, O- , and I-index, with the so-called half-scale method. As the indices canhave a value between 1 and 7, 4 is the mid-value. So all three indices were split into two groups: the values from 1 to 4 went into the group labelled as “low” (1), while the values above 4 were labelled as “high” (2).

[1] *The Kaiser-Meyer-Olkin (KMO) value helps in determining how suited our variables are to factor analysis. A KMO value above 0.8 means that the variables are highly suitable. Principal component analysis and Varimax rotation were used during the analysis*.

Theoretically all 8 clusters could represent feasible combinations, but most of the 34 OECD members fall into 4 groups (the distribution is shown in Table 5). Inour interpretation these four groups of countries represent the development models within the OECD.

The current paper focuses on Group 3, which is called the dual model. As half-scaling was used as a method of clustering, it is obvious that the countries of the dual model perform above average in their outside potential. A closer inspection of the factors shows, however, that these countries are especially strong in ensuring favourable Investment conditions, and their National goodwill (the other factor of the O-index) is below average. They are all characterised by liberalised capital flow regulations, exchange rate stability, accessible capital markets and incentive policies for investments. As far as the F-index is concerned, they perform poorly in the Quality of the education system and Human capital, while they are barely below average in the Accountable corporations factor. In the case of the I-index, the value of the Government intervention factor is slightly above average, although that cannot compensate for their weak performance in the other factors of Business competitiveness and Availability of resources.

Table 5
The clusters of OECD countries according to the half-scale method

Group & Code	Country
1 (111)	Greece, Italy, Mexico, Portugal, Turkey
3 (112)	Chile, Czech Republic, Estonia, Hungary, Israel, Poland, Slovakia, Slovenia, Spain
5 (211)	United Kingdom
6 (212)	Iceland
7 (221)	Belgium, France, Netherlands, Ireland, South Korea, New Zealand
8 (222)	Australia, Austria, Canada, Denmark, Finland, Germany, Japan, Luxembourg, Norway, Sweden, Switzerland, United States

The F-, O- and I-index values are indicated in brackets, where 1=countries with index values between 1 and 4; 2=above 4.
No countries fell into Groups 2 or 4.

It is not difficult to spot a strong focus on outside resources in the factor structure of the third cluster. These countries create a favourable environment for the world market-oriented companies, and they adopt policies that lead to a more liberalised government regulation. For this reason their economies may be characterised with the classical dual structure: a competitive, outside-oriented sector that relies substantially on outside resources, and a traditional sector applying local capital that is at least partially isolated from the other sector. The main characteristic of the dual model therefore is a strong focus on attracting outside resources, with the help of which the economy can be modernised and a higher growth rate might be achieved.

THE DUAL MODEL AS A DEVELOPMENT STRATEGY

The cluster and factor analysis based on the FOI-indices lead us to three promising development models (Clusters 3, 7 and 8). Here we discuss in detail the dual model, which implies a strategy that is focused on the attraction of outside resources. In other words we argue that if the goal is to move towards the dual model, the economic policy should concentrate on a strategy centred on the attraction of outside resources. If we draw a parallel between the development model (deducted from the clusters of countries) and the economic policy strategy, we can also tell which factors are most important for the outside-resources-oriented strategy. We have seen that the third cluster exceeds in one of the outside factors, called Investment conditions, and in one of the inside ones, called Government intervention. These two will be the areas that the economic policy needs to address when the strengthening of the dual model is the goal.

As a next step we checked which of the OECD members scored well in these two factors, and which of them has a comparable size to Hungary. In Investment conditions Ireland scores the highest, Austria is seventh, Finland and Denmark are eleventh and twelfth respectively; in Government intervention Finland is second, Denmark is fifth, Ireland is ninth and Austria is eleventh. Country studies were prepared of these four countries to detect those best practices that allowed them to excel in the areas measured by the two factors above. The country studies are fairly extensive and therefore cannot be included in the paper, but the lessons learned from them are featured in the final sections (the country studies are accessible in the Appendix of Bartha, Gubik and Tóthné Szita 2013). The final goal is to use the FOI analysis and the country studies to offer relevant policy recommendations for Hungary.

The Strategy Based on the Attraction of Outside Resources

In 2010 Hungary was part of the third cluster of the OECD countries, so it can be best characterised with the dual model. For this reason Hungary's adjustment strategy has been closest to the one based on the attraction of outside resources. This argument is further backed by the fact the best two scores of Hungary come in those two factors that are identified as the strongest of the dual model: the country is ninth in Investment conditions and eighteenth in Government intervention (this may not seem to be a good ranking, but they both can be considered as strengths compared to Hungary's twenty-fourth overall place). The outside-oriented strategy is not uncommon in the region either: all of the ex-communist OECD members (the Czech Republic,

Estonia, Poland, Slovakia and Slovenia) fall into the third group. But despite the fact that Hungary's two best scores come in Government intervention and Investment conditions, there is still plenty of room for improvement.

Table 6
Development areas for the strategy focused on the attraction of outside resources

Level	Component
L2	Advanced political culture Low level of corruption Stable and foreseeable socio-economic environment Stable public finances Exchange rate stability – Eurozone membership
L2-L3 transition	Social partnership in labour market affairs Collective agreement of employers and employees on national, sectorial and company level
L3	Transparent government, e-government solutions Regulatory impact assessment – measuring the effects of government interventions
L3-L4 transition	Persistently low corporate tax rate, with additional tax exemptions State of the art infrastructure Stable investment environment, coordinated tax and subsidy system Support for company-university-researcher cooperation
L4	Clearly defined development goals: research and development, information and communication technologies Substantial state subsidies on corporate innovation Substantial central help for start-ups and export expansion, involving subsidies, information and counselling services, and business support agencies Low level of corporate tax rates Flexible labour market

Our suggestions were put forward using Williamson's (1998) hierarchy (Table 6). As the lowest level (L4) summarises the current issues of resource allocation, the actions listed here theoretically can have an instant effect on the economy. Economic policy measures may belong to this level as well, if we assume that changes in regulations, taxes or subsidies have an instant effect on the market behaviour of firms and individuals. The longer-term effect of central intervention is that persistent measures change the structure of the market and the economy, and the relationships among firms. These belong to the governance part of the economy (L3). The strategy focusing on the attraction of outside resources requires a predictable government, and that on the other hand requires the stability of the political system. That is why Level 2 is also present in Table 6, but it has to be said that changes on this level may take decades, according to Williamson.

We shall start the presentation of our suggestions with those belonging to the highest level (L2). Because of the hierarchical system, the factors higher above are the prerequisites of anything below them. We have found that one of the pillars of best practice is the reliability of the economic policy. The corporate tax decrease policy in Ireland was started more than two decades ago, and it was consistently carried out; the many decades of minority governments has led to a special culture of political consensus seeking in Denmark that makes it possible to carefully plan and fine-tune long- term social policies; the state is committed to long-term development goals in Austria and Finland. Political stability is coupled with the transparency of the public sector and a very low level of corruption in all cases. The latter two further enforce the reliability of economic policy, as they decrease the chance of interest groups capturing the state, and destabilising the policy making.

Disciplined public finances are also an important part of the best practices. After the 2008 financial crisis it is clear that balanced budgets are important, but they seem to be an absolute must for a reliable investment environment. A stable budget position guarantees that the government does not have to take unexpected measures that affect company costs (e.g. tax raises or new taxes, withdrawing tax remedies, subsidies).

The reliability of monetary policy, more particularly the reliability of exchange rate policy, is equally as important as that of fiscal policy. It is well known that exchange rate stability is a central element of the economic policy measures of open economies. The euro partially ensures that stability, although the exchange rate against other major currencies can still be very volatile. Because at least two-thirds of the trade of the European countries is conducted within Europe, the euro is able to provide a relative stability on the continent, and lets the member countries get rid of the best part of their exchange rate risks.

The institutional framework that ensures the stability of the labour market was placed between Levels 2 and 3. Labour market issues are basically part of the allocation problem, so they should belong to Level 4. But it is also known that the pure market model is not an efficient one on the labour market, and usually there are dozens of institutional factors regulating it. This why the institutional framework of the labour market is higher up in Williamson's hierarchy. In Austria and Denmark the collective bargaining system is completely integrated into the institutions of the central government, and therefore it is linked to Level 2, but it also has an effect on the governance of companies (L3), which is why it was put as a transition between the two levels.

The dependency on the higher level structures is especially true of labour market institutions. More precisely, the Danish-Austrian type of social partnership and collective bargaining system can only be successful if the willingness to seek compromises and solidarity are an integral part of a country's culture (factors belonging to L1 and L2). Hungary had experimented with the system in the 1990es, but gave up on it after several failures, so the suggestions on L2-L3 are only for the sake of comparison. Immediate action cannot be taken based on them. What is worth remembering is that long-term labour market stability is key to the outside-resources-oriented strategy, and this can only be achieved if a well-functioning institutional framework is in place. Some

areas require some sort of central regulation and planning: the smoothing of cyclical fluctuations (e.g. compensating for lost income in case of becoming unemployed); balancing structural weaknesses (e.g. the feedback of labour market needs to the education system). In other cases institutional guarantees may be needed to prevent the state from distorting the market (e.g. separating real wage changes from market powers).

The second-order economising called governance by Williamson (L3) represents the efficiency of the government regulations in case of an economic policy analysis. This is important for the attraction of outside resources, because the administrative burdens of the bureaucracy increase the transaction costs of everyone, including the owners of foreign resources. The extent of transaction costs caused by the state therefore is a prime indicator of both capital investors and immigrants. Denmark and Finland are front runners in e-government solutions. These solutions provide huge advantages: e.g. they make bureaucracy more transparent, increase the speed at which services can be provided by the state, make it easier to declare and pay taxes, and help in creating huge databases that make public policy decisions more reliable.

Ireland is a great example for regulatory impact analysis. Stating from 2000 they gradually adopted the principle that the market distortion effects of government regulations are assessed. Basically a systematic attempt was made to quantify the transaction costs and changes in market behaviour caused by the intervention of the state. Thanks to the regulatory impact analysis the instruments that have the strongest market distortion effect may be filtered out, and the costs of both the state and the business sector can be decreased. The introduction of this approach has the added bonus of showing a more rational image of the bureaucracy, and making it look more attractive for investors.

All of our other suggestions consist of economic policy measures that have a direct effect on the allocation of resources, and an instant impact on the economy, and so they belong to Level 4 (or to the transition between L3 and L4). The hierarchical structure still applies,of course; the lower-level suggestions can only work efficiently if they are compatible with the higher-level characteristics of the country.

Ireland, Denmark and Austria have each set up a tax system where the relatively high overall tax burden is achieved with a low corporate tax rate (although the orders of magnitude are different: Ireland has one the lowest corporate tax rates in the world, its effective value is below 10%; the Danish is somewhat higher than the Irish, while the Austrian corporate tax rate can only be considered low if we compare it to the average of the developed welfare states). As the tax rate is a pivotal point in the investment decisions of the transnational companies, a consistently low corporate tax can be a great attraction.

In all countries the state support for clusters is a main priority. Clusters usually involve the cooperation of companies, research institutes, universities, development agencies and risk capital firms, but they are also supported by the state. The practice of Denmark, Austria, Ireland or Finland shows that state support alone is not enough; the clusters may only be successful if they carry special knowledge that is competitive in the world market. Those industries are worth supporting that have traditionally performed well and whose main companies are well known on the world market (good examples for the Danish are food, pharmaceutics and wind energy, for the Finnish wood or information technology, for the Irish process innovation, and for the Austrians car manufacturing clusters).

The flexible labour market is another attraction for transnational companies. If the termination of employment does not require a lot of administrative tasks, and can be carried out with relatively low costs, companies are able to adjust to the fluctuations in the world market demand. Denmark also has a social safety net, and applies several active labour market instruments that ensure that the unemployed can find a new job relatively quickly.

The suggestions in Table 6 will not only strengthen the model based on the attraction of outside resources, but the FOI analysis showed that they primarily affect the factors that are the pillars of such an economic policy orientation. The economic policy should concentrate on these instruments, if the main priority is the attraction of outside resources.

CONCLUSION

The dual model detected with the FOI model can be characterised as a development strategy based on the attraction of outside resources. Countries choosing this as a priority try to create an internal business and regulation environment that will make them attractive to outside investors. The more attractive environment may encourage the inflow of outside resources, which are needed because the local capital and knowledge generation is not sufficient. Many historical examples confirm that such a development strategy can prove successful, but the global environment has its risks as well. On the one hand overreliance on outside resources can result in a dependent position, because the sudden withdrawal of resources may lead to the collapse of the economy. The dependent position on the other hand can push the country toward an institutional environment favouring outside agents to the local ones – a process that further strengthens the exposure of the country.

What steps are recommended to adopt a development strategy based on the attraction of outside resources?

- ➢ Long-term commitment to relevant policy incentives, such as:
  - decreasing and keeping corporate tax rates low;
  - exchange rate stability;
  - tax remedies and subsidies targeted towards large corporations;
  - infrastructure development;
  - or a combination of the above.
- ➢ Making the central bureaucracy and government decision-making process more transparent, introducing a wide variety of e-government solutions.
- ➢ Labour market mix: easing of the recruitment and layoff rules, increasing the flexibility on the one hand, maintaining stability on the other hand (minimal loss of working hours, modest wage increase).

The hierarchy presented in Figure 1 shows that careful consideration of instruments is needed before any steps are taken, because positive outcomes can only be expected from economic policy measures that are in harmony with the institutional framework of the country.

Acknowledgement

The paper was prepared within the framework of OTKA project No. K 76870/2009-13.

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