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Using Foreign Direct Investment to Upgrade and Diversify Exports from Morocco:

Opportunities and Challenges in Comparative Perspective

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Abstract

Developing countries that manage to upgrade and diversify their export profile grow more rapidly and achieve greater welfare gains than countries that simply export larger volumes of what they have traditionally produced.

This discussion paper examines what market imperfections and other impediments make the task of using FDI for structural transformation so difficult. Drawing on country case studies from Malaysia, Costa Rica, the Czech Republic, and South Africa, the paper identifies best practices for making progress, on the one hand, and examining impediments that lead to failure, on the other.

This study has been prepared to serve as the basis for a workshop at which on-the-ground practitioners in Morocco can view their country's efforts at structural transformation in light of similar experiences elsewhere. The objective is to highlight accomplishments and raise questions about future obstacles for Morocco's aerospace sector, for the automotive cluster in Tangier Med, for OCP, and for investment promotion via the Moroccan Agency in Charge of Promoting Foreign Direct Investment .

I. How to Upgrade and Diversify the Domestic Export Base: A Comparative Perspective

1. The Importance of Structural Transformation

Development strategy has shifted in recent years from preoccupation with simple export-led growth to a sharper focus on changing the composition of exports. Emerging economies benefit not simply from exporting ever-larger amounts of what they have always produced but also from shifting their export profile towards more sophisticated output. Developing countries that manage to export a wider set of higher-quality (higher unit value) goods and services grow more rapidly and enjoy greater welfare gains than countries that do not.¹ New exports to regional markets can make a valuable contribution. Penetrating developed country markets is particularly important.²

Some countries have been able to rely on their own indigenous entrepreneurs to diversify and upgrade their economies. But most countries in the contemporary period look to foreign direct investment (FDI) to help propel the process of structural transformation. After all, in the contemporary era multinational corporations account for 80 percent of all transfers of goods and services across borders, either within their own affiliate transactions or through networks constructed with independent providers. Thus the task for emerging market governments is to design trade-and-investment strategies to attract foreign investors into novel and higher-skill-intensive sectors, and link the host economy into FDI global supply chains.³

For developing countries that want to attempt to use FDI to help with structural transformation, there is uncontested but perhaps surprising good news.

Popular discussion often portrays FDI in manufacturing and assembly as flowing primarily to lowest-skill, lowest-wage activities in the developing world, such as garments and footwear. But a closer look at the data paints quite a different picture – by far the majority of manufacturing FDI in developing countries flows to more advanced industrial sectors, and the weighting toward more skill-intensive investor operations is speeding up over time.

As Table 1 shows, the flow of manufacturing FDI to medium-skilled activities – such as transportation equipment, industrial machinery, electronics and electrical products, scientific instruments, medical devices, chemicals, rubber, and plastic products – is nearly ten times larger per year in the most recent period for which data are available than the flow to low-skilled, labor-intensive operations, and has been speeding up over time. The ratio between higher and lower skill-intensive activities was roughly five times larger in the period 1990–1992, and approximately 14 times larger in the period 2005–2007.

^{1.} Ricardo Hausmann, Jason Hwang, and Dani Rodrik. 2007. What You Export Matters. Journal of Economic Growth. 1-25.December 2. Aditya Mattoo and Arvind Subramanian. 2010. "Crisscrossing Globalization: The Phenomenon of Uphill Skill Flows," in Annual World Bank Conference on Development Economics 2009, Global: People, Politics, and Globalization, The World Bank, June. 115-140.

^{3.} This paper draws on the assessments and analysis in Theodore H. Moran. 2014. Foreign Investment and Supply Chains in Emerging Markets: Recurring Problems and Demonstrated Solutions. Washington, DC: Peterson Institute for International Economics, Working Paper 14-12. December.

Table 1: Manufacturing FDI Flows to Developing Countries (millions of dollars)

	1990–1992 (annual average)	2005–2007 (annual average)	2009–2011 (annual average)
Lowest-skilled sectors	\$758	\$2,496	\$5,308
Higher-skilled sectors	\$4,155	\$34,788	\$51,411
Ratio of higher-skilled FDI to lowest-skilled FDI	5x (5.48x)	14x (13.94x)	10x (9.69x)

Note: For a complete breakdown by sector, see Annex I (FDI flows) in the UNCTAD 2014 data base.

In the days of the Washington Consensus, it might have been comfortable to imagine that all would-be host governments had to do if they wanted to attract this vast array of FDI in middle-skilled activities for structural transformation was to improve their domestic doing-business indicators and then sit back and wait for multinational manufacturing corporations to come knocking. But while improving doing-business indicators may be a necessary condition for attracting increasingly sophisticated foreign investors, recent experience shows that this is often not a sufficient condition.

What market failures and other obstacles stand in the way of host countries harnessing FDI to the task of structural transformation through the creation of internationally competitive supply chains?

2. The Hausmann-Rodrik Model of Market Failures Preventing Structural Transformation

Ricardo Hausmann and Dani Rodrik have proposed what has now become the standard model of the market failures that prevent structural transformation.⁴ Developing countries that have become "good reformers", they observe, often fail to become "good performers". The explanation lies in information asymmetries coupled with appropriation problems. Local and international entrepreneurs do have cost information about already-existing activities, but they can obtain cost information about novel operations only by "trying out" these new activities. Uncovering new information about production that can be shared across the entire economy is very important, but it is easy to understand, argue Hausmann and Rodrik, why it will always be under-supplied. The cost of trying out novel activities is private and must be absorbed by the entrepreneur when unsuccessful, whereas the benefits that result from success are socialized as imitators rush in to take advantage of any profitable discovery.

Harnessing FDI to structural transformation therefore must combine improving doing-business indicators, and overcoming information asymmetries, with addressing the fundamental reluctance of first-mover investors to engage in cost discovery. To break the log-jam, potential hosts have to make the appropriation problem vanish, according to Hausmann and Rodrik, by subsidizing first-mover investors.

Is this an accurate appraisal?

^{4.} Ricardo Hausmann and Dani Rodrik. "Economic Development as Self-Discovery" Journal of Development Economics, vol. 72, December 2003.

What does the evidence from developing countries that have tried to use FDI to diversify and upgrade their production and export base demonstrate about the precise nature of market failures and the specific kinds of policies needed to bring about structural transformation?

To answer this question, it would be desirable to have a large-N database covering the experiences of individual countries trying to attract FDI with micro-evidence about appropriability problems, about failures in information markets, and about coordination externalities that can be addressed through government policies. Such a database does not exist, and proxies for such subtle variables may not even be able to be identified. So I go in the opposite direction, and draw on four case studies in which substantial evidence about micro-details on attracting foreign investment to novel middle-skilled and higher-skilled activities does exist, pinpointing the market failures and impediments to structural transformation across all three cases. These four case studies – investment promotion and FDI upgrade in Penang, Malaysia; investment promotion and FDI upgrade in Costa Rica; investment promotion and FDI upgrade in the Czech Republic; investment promotion and the attempt at FDI upgrade in South Africa – allow identification of the precise nature of market failures and the specific kinds of industrial policies to bring about structural transformation.

All four cases reinforce the well-established observation that even after developing countries undertake macro-, micro-, and institutional reforms they must take pro-active steps to attract FDI, using effective and energetic Investment Promotion Agencies (IPAs).⁵ The Penang Development Corporation in Malaysia, CINDE in Costa Rica, and the CzechInvest in the Czech Republic had to launch vigorous "campaigns"

to place themselves on the informational horizon of multinational investors, especially multinational investors in non-traditional sectors. South Africa has tried to do the same.

Evidence about the importance of pro-active investment promotion is not limited to case study materials. Torfinn Harding and Beata Javorcik provide rigorous econometric backing for this kind of investment promotion intervention. Comparing data from 109 countries with an Investment Promotion Agency (IPA) and 31 without, they find that the presence of an IPA is correlated with higher FDI inflows, in particular higher FDI inflows into sectors targeted by the IPA, but only if the host has previously improved its local business climate. They compare FDI inflows into targeted sectors, before and after targeting, to FDI inflows into non-targeted sectors during the same time period, and find that active IPA targeting doubles FDI inflows. They control for changes in host-country business environment by including country-year fixed effects, for heterogeneity of sectors in different locations by including country-sector fixed effects, and for shocks to supply of FDI in particular sectors by adding sector-time fixed effects. In checking for reverse causality, they find no evidence that targeting took place in sectors with relatively high or low inflows in the years preceding targeting.

Reinforcing the observations from Costa Rica, Malaysia, and the Czech Republic – but not South Africa—Harding and Javorcik discover, in a separate study, that FDI targeting by Investment Promotion Agencies can be used to raise the quality of exports from the host economy.⁷ Examining evidence from 105

^{5.} Jacques Morriset, Jacques and Kelly Andrews-Johnson. 2003. "The Effectiveness of Promotion Agencies at Attracting Foreign Direct Investment." Washington DC: Foreign Investment Advisory Service Occasional Paper 16. Louis T. Wells Jr. and Alvin G. Wint. 2000. Marketing a Country: Promotion as a Tool for Attracting Foreign Investment, Revised Edition, Washington DC: The International Finance Corporation, the Multilateral Investment Guarantee Agency, and the World Bank.

^{6.} Torfinn Harding and Beata Javorcik. 2012. "Foreign Direct Investment and Export Upgrading". The Review of Economics and Statistics. 94 (4): 964-80.

^{7.} Harding, Torfinn and Beata Javorcik. "Investment Promotion and FDI Inflows: Quality Matters". CESifo Economic Studies, 59(2),

countries from 1984 to 2000, they relate unit values of exports at the four-digit Standard International Trade Classification (SITC) level to data on sectors treated by IPAs as a priority in their efforts to attract FDI. They show that the sectors given priority by the host IPA have higher unit values of exports. These findings are robust to using two different data-sets, and to instrumenting for the choice of priority sectors. The authors' data suggest that hosts can use foreign investment to increase the quality of exports both in absolute terms and in terms of bridging the distance to the quality frontier.

What is the imperfection in information markets that has to be overcome by host country policy? Here is where the micro-data from the case studies of Malaysia, Costa Rica, the Czech Republic, and South Africa provide an important policy insight. The Hausmann-Rodrik method to characterize the imperfection in information markets is to consider it as a problem of information asymmetries. But the case study evidence shows that this is an incorrect assessment.

Information asymmetry implies that one side (the host) has more and better information than the other side (the potential investor), which may well be true. But the core problem is that neither side knows whether a new and untried site will be an effective production location for investment in a novel economic activity. The key is for the would-be host to provide substantive assurance to the new investor in the novel sector that the investor can integrate local production seamlessly into the investor's global supplier network; this requires more than a financial subsidy.

3. Evidence from Penang/Malaysia

Led by the regional government of Penang, Malaysia provides perhaps the largest pre-China illustration of using FDI for structural transformation of the local economy. Over a mere four decades, beginning in the early 1970s, Malaysia shifted from being a resource-based economy, known throughout the world for rubber and tin, to a manufacturing powerhouse centered on large-scale electronics exports. Manufacturing's share of total exports rose from six percent in 1970 to over 70 percent by 2014. Along with several other states, the regional authorities in Penang played a pivotal role in this transformation.

When the Penang Development Corporation (PDC) launched the initial investment-promotion-cuminfrastructure-build out around Penang International Airport – consisting of phase one and phase two of construction of Bayan Lepas Free Industrial Zones from 1972 into the early 1980s –internationalization of the global electronics industry was driven by a search for low-wage labor-intensive production of printed circuit boards or assembling low-end products. As PDC tried to transform itself into an investment promotion agency with the same energy and effectiveness of the nearby Singapore Economic Development Board (EDB), the test for Malaysia was to induce international electronics investors to upgrade their operations to more complex sub-assemblies and final products, complete with design functions and design teams, and high-performance quality-control procedures. The case study of Penang offers a key insight that will be reinforced in the two other case studies that follow. The principal challenge was to reassure foreign investors in middle-skilled activities that they would be able to link their plants in untried sites smoothly into the global production complex upon which the parent MNC's competitive position in international markets depended.

What are the key ingredients that offer such reassurance? The most important are (1) efficient infrastructure, (2) access to appropriately trained workers, supervisors, technicians, and managers, and 2013.

8. For more detailed presentation of the evidence from Malaysia, see Moran, op. cit.

(3) a reasonable amount of labor market flexibility In Malaysia, the building of the electronics complex in Penang began with infrastructure construction adjacent to the state's international airport. To induce multinational investors to upgrade their operations to include more complex tasks, the PDC broadened its investment promotion functions to include the Penang Skills Development Corporation (PSDC) in 1989. With a steering committee headed by Motorola, Hewlett-Packard, and Intel, the PSDC induced 24 "founder" firms to contribute equipment and assign executives to teach at the new campus financed by the state of Penang. Within seven years—in 1996—a United States Agency for International Development (USAID) study ranked the PDSC as one of the ten leading workforce development institutions in the world. In terms of infrastructure upgrades, the PDC meanwhile added IT improvements to transportation improvements. With intensive lobbying from the PDC, the Malaysian central government began plans for the Multimedia Super IT Corridor, and in 2005 chose Penang to be the first in the country to be awarded cyber-city status. Changing its name to InvestPenang in 2004, the former PDC began to target FDI in advanced electronics, with FDI in biotechnology, including, for example, electrical and electronic-based medical devices, automation-based medical devices, and diagnostic tools. To make sure that vocational training programs keep pace with the novel FDI promotion efforts, the PSDC founded a Micro-Electronics Center of Excellence located at Universiti Sains Malaysia, which houses a world-recognized school of pharmacology.

Along side infrastructure improvements and public-private partnerships for vocational training, the third ingredient for using foreign investors for structural transformation was unavoidably controversial. Searching for labor market flexibility, foreign investors insisted that unions be excluded from Malaysian export zones altogether during the early low-wage electronics assembly period, as well as being freed from any requirement to have local partners or to participate in the bumiputera system. As the multinational corporations moved into higher skilled operations, the government allowed in-house unions to organize, beginning in 1989. Wage levels in higher-skilled electronics rose substantially, but the emphasis on labor market flexibility has continued – layoffs, retrenchments, transfers and job assignments continued to be outside the scope of bargaining at the firm level. In the Global Competitiveness Index 2012-2013, Malaysia ranked twenty-sixth out of 148 countries in ease of hiring and firing, and second in the world in the relationship between pay and productivity.

Once anchor investors like Motorola, HP, Philips, and Texas Instrument became confident that they had mastered the task of seamless integration of the new sites, they moved rapidly ahead without pause. What is notable is that there are no indications of appropriability problems as first-mover electronics firms in Malaysia moved from low-wage assembly into higher-skill production and design activities. The US and European firms that led the upgrading of electronics operations – notably Motorola, Texas Instruments, Hewlett Packard, and Philips – steadily added more-complex operations and design functions. Firm-level microdata document Motorola's affiliate moving from rudimentary printed circuit board assembly for pagers and private radio systems to worldwide responsibility for design, development, and automated manufacture of double-sided six-layer printed circuit boards and for design and development of integrated circuits for disk drives and other peripherals. Hewlett Packard progressed from assembly of calculators to manufacture, tooling development, process design, and even chip design for portable printers, desktop computers, and servers. Reflecting on the evolution of Texas Instruments, an executive observed, "We came for the cheap labor and the tax advantages, but we are staying because of the expertise we have built

^{9.} R. Rasiah, 1995. Foreign Capital and Industrialization in Malaysia. New York: St. Martin's Press. Giovanni Capanelli 1997. "Buyer-Supplier Relations and Technology Transfer: Japanese Consumer Electronics". International Review of Economics and Business 44, no. 3 (September): 633-62.

up here. As far as assembly and testing are concerned we have more expertise here than we have in the US. We sometimes have to send our Malaysian engineers to the States to solve their problems." By the late 1980s Japanese overseas investment assumed the famous flying-geese pattern with great electronics firms following each other in formation to Malaysia as well as other locations in Southeast Asia.

Before the worldwide recession of 2008, the electronics industry had become Malaysia's leading manufacturing sector, accounting for 29 percent of gross domestic output, 56 percent of exports (\$75 billion), and 29 percent of total employment in the manufacturing sector (some 299,000 workers, supervisors, engineers, and managers). The economic downturn hit the Malaysian export sector particularly hard, but by 2014, Malaysian electronics exports had climbed back to \$66 billion.

4. Evidence from Costa Rica

Costa Rica's campaign to attract Intel offers a second slightly-later chronological case study with enough micro-data to identify the market failures and other impediments to using FDI for structural transformation.¹¹ For Costa Rican authorities, the challenge was not to move from lower to higher skill operations within a single industry as in Penang but rather to shift export sectors completely.

By the time President Jose Figueres took office in 1994, the country had already undertaken a series of reforms that today would be called improving doing-business indicators in the domestic economy. The president himself directed the Costa Rican investment promotion agency—CINDE—to study the needs of the information technology (IT) industry and target the semiconductor producer Intel as the principal company for FDI attraction.¹²

As in Penang, Costa Rica's Investment Promotion Agency did indeed provide detailed information about economic conditions, investment laws, and regulatory regimes to Intel negotiators. But the central preoccupation of Intel HQ was – as in Malaysia – reassurance that a semiconductor fabrication plant in Costa Rica could be smoothly bound into the parent's worldwide supply chains. CINDE had to figure out ways to provide such reassurance, not simply offer more or better information, nor merely provide a financial subsidy.

As in Malaysia, Intel wanted to minimize the risk of work stoppages. Intel plants around the world were non-unionized, and Intel sought a location where labor organizing was not strong. Costa Rica had a low rate of unionized workers (seven percent of private sector employees), with a widespread alternative of Solidarity Associations between labor and management that provided services and financial benefits to workers. It should be noted that Intel sought labor market flexibility, not lowest wage labor. Indeed, Intel intended to pay superior wages (one-and-one-half times the national manufacturing average) and offer superior working conditions. Intel did not seek a legal prohibition on labor organizing, but had to be satisfied that their facilities would be unlikely to meet frequent threats of strikes.

Beyond labor market flexibility, two issues dominated the 19 negotiating sessions between Costa Rica and Intel. First, CINDE—backed by personal involvement of President Figueres—had to offer infrastructure

^{10.} Linda Lim and Eng Fong Pang. 1995. Foreign Direct Investment and Industrialisation: in Malaysia, Singapore, Taiwan and Thailand, Paris: OECD. P. 111.

^{11.} For more detailed presentation of the evidence from Costa Rica, see Moran, op. cit.

^{12.} Debora Spar.1998. Attracting High Technology Investment: Intel's Costa Rican Plant (Washington: World Bank Group, Foreign Investment Advisory Service Occasional Paper 11. Roy C. Nelson. 2009. Harnessing Globalization: The Promotion of Nontraditional Foreign Direct Investment in Latin America. University Park, Pennsylvania: The Pennsylvania State University Press.

enhancements that included a speeded-up renovation of the national airport with special facilities for Intel freight, plus building a new power substation on the electrical grid dedicated to the prospective Intel semiconductor plant. Second, the Figueres administration had to form a public-private partnership for vocational training in which the national technological institute (Instituto Technological de Costa Rica) would co-design with Intel a training program for IT workers, supervisors, engineers, and managers. So, as in Penang, once Costa Rica provided reassurances about seamless integration, final negotiations about how to structure the final deal with Intel were able to proceed.

As in Malaysia, there has been no evidence of appropriation problems whatsoever in the Costa Rica case. First-mover Intel's behavior since its original investment of \$115 million in 1997 does not appear to have been slowed by an inability to earn sufficient returns; if anything, Intel has benefitted from cluster effects as other investors moved in. Intel followed its first plant with a second, and then added a global distribution center. In the decade and a half since 1997, Intel has invested an additional \$900 million in Costa Rica, while increasing the number of local employees from 500 to 2,800, before a worldwide retrenchment strategy in 2014 led the company to shift from semiconductor assembly to software development in Costa Rica.

5. Evidence from the Czech Republic

Founded in 1992, CzechInvest first targeted what it characterized as "light industry". In anticipation the accession of the Czech Republic to the EU, CzechInvest shifted its focus in 2001to the attraction of investors with higher engineering-intensive operations, hiring staff with expertise in the automotive, aerospace, IT, and electronics sectors. The Czech Republic had traditionally been very strong in technical fields – approximately one-third of all university graduates have a degree in a technical field. CzechInvest launched public-private training partnerships involving foreign firms with the Czech Technical University in Prague and other engineering programs in Plzeň, Liberec, Pardubice, Brno, Zlín and Ostrava.

At the same time, CzechInvest gained authority to provide construction grants for the development of business properties, and became a direct conduit for the co-financing of projects using EU structural funds. Between 2004 and 2013 it provided infrastructure support to more than 100 industrial zones.

The Global Competitiveness Index 2012-2013 portrays a more nuanced portrait of labor market flexibility in the Czech Republic than found in either Costa Rica or Malaysia. On the one hand, the ease of hiring and firing measurement places the Czech Republic 121st out of 148 countries, suggesting the presence of labor regulations and union strength in the tradition of counterpart economies in the EU. On the other hand, there is a close relationship between pay and productivity, placing the Czech Republic at the 19th most competitive out of 148 countries around the globe.

In the Czech Republic, the use of FDI to upgrade and diversify the country's production and export base is a work in progress. Between 2000 and 2013, CzechInvest helped some 2000 investment projects get started, with investments of approximately \$28 billion, generating 215,000 jobs. These include more than 224 R&D centers, thirty-seven in the automotive sector and fifty-two in precision engineering. Czech automotive facilities include Porsch Engineering Services, Biseon, Bosch, Honeywell, Siemens, and TRW. Czech electronics plants include Panasonic, Bang & Olufson, ST Microelectronics, Flextronics, and AMI Semiconductor.

So the ingredients for success in using FDI to achieve structure change in Costa Rica, Malaysia (Penang), and the Czech Republic include aggressive investment promotion, backed by infrastructure improvement and public-private partnerships for vocational training, plus flexibility in labor market regulations. These are the measures these three countries have used to attract middle-skilled investors who want to ensure tight integration of local plants into their world-wide production network.

6. Evidence from South Africa

The case of South Africa, in contrast, illustrates how overly-rigid labor regulations can undermine aggressive investment promotion, even when backed by impressive infrastructure upgrades.

The South African economy has of course long enjoyed a significant high-skill-intensive FDI-led industrial sector, in particular in autos and transportation equipment. The 2013-2015 Industrial Policy Action Plan (IPAP) proposes to draw in large numbers of foreign investors to expand the country's industrial base. IPAP includes large-scale infrastructure expenditures to strengthen the country's three IDZs, in Richards Bay, East London, and Coega outside Port Elizabeth, as well as begin development of 10 new Special Economic Zones (SEZs). The principal objective, as laid out in the New Growth Path 2010-2020, is to use indigenous and foreign investment to generate high-paying jobs for South African workers.

But, despite pro-active efforts to attract foreign investors, the three existing industrial development zones have had a weak response. Even with impressive port and rail infrastructure on the northeast coast, Richards Bay has only one investor as of 2014 (Tata Steel). The East London IDZ has a handful of auto parts investors, a diamond polisher, and a dairy. The IT and electronics, aquaculture, agro-processing, renewable energy, and general manufacturing targeted sectors in East London stand empty. Only the Coega IDZ, in operation since 1999, has managed to attract an appealing but very modest portfolio of international investors. As of 2014 there were 23 companies generating some 3500 jobs.

A major obstacle to attracting FDI has been South African labor market regulations. Minimum wages are relatively high, and there is no trial or apprenticeship wage to introduce workers into on-the-job training. Labor bargaining councils are dominated by large established firms and unions; their agreements are typically extended to all businesses in a sector. This practice retards entry of new participants into the sector and inhibits smaller or less-experienced companies from investing. At the same time, it is very expensive and costly in South Africa – like Morocco (discussed next) – to lay workers off in response to changing conditions of external supply and demand. In 2012-2013, South Africa was ranked 147th of 148 countries in ease of hiring and firing category of the Global Competitiveness Index, and 142nd in the relationship between pay and productivity.

Across the South African economy, rigid labor regulations are beginning to be recognized as a major factor contributing to unemployment rates above 30 percent, higher for youth – the Centre for Development and Enterprise in Johannesburg estimates that the unemployed in the South African economy make up 40 percent of the workforce.¹³ These regulations are as well a major impediment to attracting new foreign investments or stimulating reinvestment.

^{13.} Centre for Development and Enterprise. 2013. Rethinking South Africa's Labour Market: Lessons from Brazil, India and Malaysia. Johannesburg South Africa: (June).

Table 2 : Comparative Appraisal of Host Efforts To Use FDI To Upgrade and Diversify Domestic Production and Export Base

	Doing- Business Indica- tors*	Proactive Investment Promotion Agency	Infrastruc- ture Pac- kages	Public- Private Partner- ships for Vocational Training	Labor Mar- ket Flexibi- lity	FDI Up- grades and Diversifica- tion Out- comes
Costa Rica	+	+	+	+	+	+
Malaysia/Penang	+	+	+	+	+	+
Czech Republic	+	+	+	+	+	+
South Africa/IDZs	+	+	+	n/a	-	-

^{*}Doing-business indicators in export zones without considering labor market flexibility

Investigation of the challenges of using foreign direct investment to create supply chains in novel sectors of emerging markets is becoming a new frontier for researchers and policymakers alike.¹⁴

II. The Movement Toward Structural Transformation in Morocco: An External Perspective

A close look at the export profile of Morocco shows that developments in three sectors (aerospace, automotive, and chemical fertilizers) have transformed the "revealed comparative advantage" of the Moroccan economy over the past twenty years. The emergence of two of these sectors – the aerospace cluster near Casablanca and the automotive hub in Tangiers – has been propelled by foreign direct investment. The modernization and transformation of phosphate mining into a modern chemical fertilizer sector has been the work of OCP, the national phosphate company, in conjunction with Jacobs Engineering of the United States.

In Morocco, inward flows of foreign direct investment rose from less than one percent of GDP in the 1990s to an average around four percent of GDP during 2003-2007 – before the international financial crisis caused FDI flows to plummet around the globe. But the larger volume of pre-crisis FDI flows into Morocco remained largely centered in low-skill, low value-added activities, except (as will be seen next) for the aerospace sector.¹⁵

^{14.} Karina Fernandez-Stark, Penny Bamber, and Gary Gereffi. The Fruit and Vegetables Global Value Chain: ECONOMIC UPGRADING AND WORKFORCE DEVELOPMENT. Center on Globalization, Governance & Competitiveness, Duke University November, 2011. Does FDI work for Africa? Assessing local spillovers in a world of global value chains, by Thomas Farole and Deborah Winkler, Economic Premise Number 135, World Bank, February 2014. Caroline Freund and Theodore Moran. Multinational Investors as Export Superstars: How Emerging Market Governments Can Reshape Comparative Advantage Washington DC: Peterson Institute for International Economics. Forthcoming 2016. Theodore H. Moran, Foreign Direct Investment, Supply Chains, and the Transformation of New Comparative Advantage: Comparisons Across Industry Sectors. Washington, DC: Peterson Institute for International Economics, Forthcoming. 2016

^{15.} IBRD and IFC: Country Partnership Strategy Progress Report for The Kingdom of Morocco for the period FY10-13. May 15, 2012. Kingdom of Morocco: Country Economic Memorandum, two volumes. Washington, DC: The World Bank, March 14, 2006.

1. The Aerospace Cluster near Casablanca

The transformation of the export profile of Morocco toward higher-skilled manufacturing sprang to a certain extent from fortunate – even lucky – circumstances. The spearhead for export upgrading originated in an unlikely sector – aerospace – and was launched by a Moroccan national named Seddik Belyamani, who had risen to become Boeing's Executive President for Worldwide Sales in Seattle. Beginning in 1997, M. Belyamani led an internal search within Boeing for more than a year to identify what aerospace components might be reliably produced in Casablanca. Working with his counterpart senior executive in Royal Air Moroc, M. Hamid Benbrahim El-Andaloussi, the Boeing study led to creation of joint venture between Boeing, Royal Air Moroc, and a Moroccan firm Labinal – the JV took the name Matis – to outsource assembly of wire harnesses to Morocco.

M. Belyamani and his American counterparts at Boeing in Seattle initially expected to achieve efficiency of no more than 30% of industry norms, but Matis productivity growth hit 70% of industry standards within two years. In 2002, M. Belyamani left Boeing and returned to Casablanca to become Chairman of Matis. Matis now builds wire bundles for the Boeing 737, 747, 757, 767 and 777 airplanes. Airbus, SNECMA, Bombardier, and Embraer have set up export facilities in the same industrial parks.

To ensure that current companies – and new investors – have access to an adequate supply of well-trained employees, the Organization of Moroccan Aeronautics Companies (Groupement des Industriels Marocain Aeronautique et Spatial, or GIMAS), the Union of Metallurgical Workers, and the Ministries of Labor, Industry, and Finance signed a convention in February 2009 – under sponsorship of King Mohamed VI – to set up an Institute for Aeronautical Training. With combinations of classroom and on-the-job training lasting between 23 and 42 weeks, the Institute aims to train technicians in capacities such as engine overhaul, metallurgy, electrical systems, and numerical systems and controls, as well as mid-management professional development. The Organization of Aeronautics Companies (GIMAS) plays a central role in the design of the curriculum, with continuous course renovation to meet the needs of current and potential employers.

To evaluate the importance of foreign investment in transforming the fundamental economic structure of the host economy, it is possible to identify a dynamic change in a country's comparative advantage, using what is called the Bella Balassa index of revealed comparative (RCA), as follows:

(1)
$$RCA_{ik} = \frac{\frac{x_{ik}}{x_i}}{\frac{x_{wk}}{x_w}},$$

where Xik is exports from country i in industry k and Xi is total exports from country i and the subscript w references world exports. A Balassa index greater than one implies that a country reveals itself to have changed the underlying comparative advantage of its economy, as it begins to export a greater share in that industry than the typical country.¹⁶

Using the Balassa index, Figure 1 shows Morocco's revealed comparative advantage in airplane parts

^{16.} Balassa, B. (1965), 'Trade liberalization and "revealed" comparative advantage', The Manchester School of Economic and Social Studies 33: 92–123.

Balassa, B. (1989), "Revealed" comparative advantage revisited, in: B. Balassa (ed.), Comparative Advantage, Trade Policy and Economic Development, New York University Press, New York, pp. 63–79.

(HS 8803).¹⁷ Belyamani's return to Morocco and Boeing's investment is visible in the development of comparative advantage, almost overnight, in airplane parts.

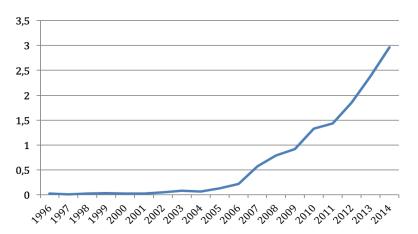


Figure 1: Morocco's Revealed Comparative Advantage in Airplane Parts

Balassa index of comparative advantage. These calculations are derived from Caroline Freund and Theodore Moran. Multinational Investors as Export Superstars: How Emerging Market Governments Can Reshape Comparative Advantage Washington DC: Peterson Institute for International Economics. Forthcoming 2016.

Morocco is the exception that proves the rule with regard to the need for aggressive and effective investment promotion: the partnership between the two individuals who launched the creation of Morocco's aerospace cluster – Seddik Belyamani and Hamid Benbrahim El-Andaloussi – personally made up for weaknesses in Morocco's Investment Promotion Agency that the World Bank Investment Promotion Agency Benchmark exercise ranked as mediocre.

In 2009, however, Morocco renovated its Agency in Charge of Promoting Foreign Direct Investment and placed it under the direction of an individual – Ambassador Fathallah Sijelmassi – whose earlier responsibilities included negotiation of the Moroccan-EU trade access arrangement and the US-Morocco FTA. This freshly designed agency provides a promising vehicle to move Morocco from the lower ranks in investment promotion toward the frontier of best practices around the world. The Moroccan Agency in Charge of Promoting Foreign Direct Investment is housed under the authority of the Ministry of Industry, Trade, and New Technologies, while enjoying considerable autonomy including the right to appeal decisions regarding FDI projects to the prime minister. With salaries higher than civil service, The Moroccan Agency in Charge of Promoting Foreign Direct Investment has enjoyed success in recruiting professional staff with private sector experience (at Procter and Gamble, for example, and at Price Waterhouse), organized into special industry teams.

2. The Automotive Hub at Tangier Med

At the same time, Morocco has undertaken a major effort to upgrade its infrastructure. While favorably located right on the periphery of the EU, the country nonetheless ranked in the Global Competitiveness Index at 69th of 142 countries in 2008. In mid-2009 the Kingdom launched Tangier Med II, a large expansion and renovation of the Tangier port facilities on the south coast of Gibraltar. With the full opening of Tangier-Med Port terminals 1 and 2, traffic reached capacity, exceeding 3 million containers in 2014, a 20 percent increase over 2013. The port is expected to process 8 million containers, 7 million passengers, 700,000 trucks, 2 million vehicles, and 10 million MT. Once fully operational in 2016, Tangier Med is expected to rank as the largest transshipment hub in Africa. The deep-water port facilities are 17. For Morocco, 4-digit HS codes are used instead of 4-digit SITC, as these offer a more relevant sectoral breakdown for the period. These calculations are derived from Caroline Freund and Theodore Moran, Multinational Investors as Export Superstars: How Emer-

^{17.} For Morocco, 4-digit HS codes are used instead of 4-digit SITC, as these offer a more relevant sectoral breakdown for the period. These calculations are derived from Caroline Freund and Theodore Moran. Multinational Investors as Export Superstars: How Emerging Market Governments Can Reshape Comparative Advantage Washington DC: Peterson Institute for International Economics. Forthcoming 2016.

surrounded by multiple free trade zones and industrial parks and integrated with modernized rail lines into the interior of the country.

The initial investment promotion priority is to try to turn Tangiers into an automotive hub with the potential to reach a market of eight million car owners in Spain, Portugal, France and Italy within three days of loading vehicles right off the production line onto ships. Inaugurated with Renault as an anchor investor, auto production in Tangiers is expected to reach 340,000 vehicles when phase II of Renault's investment program is completed in 2016 (depending upon the extent of economic recovery in the EU). As of 2015, employment has reached 5026 workers in body works, powertrains, and spare parts.¹⁸ The Moroccan-made content of vehicles is approximately 35-40 percent, with a target to increase the share to 60 percent in coming years.

Figure 2 shows that Morocco has again been successful in using FDI to change the underlying comparative economy of the economy in motor cars and bodies for the automotive industry (SITC 7349) as well as airplane parts.

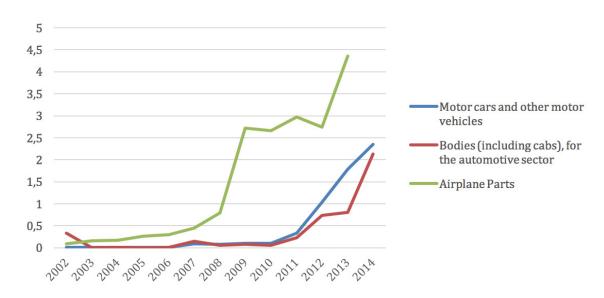


Figure 2: Moroccan Comparative advantage motor cars and bodies as well as airplane parts

Source: Balassa index of revealed comparative advantage. These calculations are derived from Caroline Freund and Theodore Moran. Multinational Investors as Export Superstars: How Emerging Market Governments Can Reshape Comparative Advantage

Washington DC: Peterson Institute for International Economics. Forthcoming 2016.

The French auto giant Renault, in partnership with Nissan, hopes to induce a broad array of international parts suppliers to co-locate in the Tangier complex. Working together, Renault and Moroccan authorities are establishing a center for vocational training in the automotive sector, with a curriculum to be designed by the private sector participants.

3. OCP – The Transformation of the National Phosphate-Fertilizer Company

With the appointment of new management in 2006, OCP undertook to replace old traditions of para-statal administration with state-of-the-art procedures for audit, control, safety, human resource management, and IT monitoring of operations, maintenance and inventory, while beginning the process of rationalizing

^{18.} Groupe Renault. International Website. Visited December 12, 2015.

and doubling mine output, and tripling chemical operations. OCP reestablished itself as a legal corporation (Société Anonyme), with a professional measure of autonomy separate from ownership by the state, subject to audit by Deloitte and Ernst & Young.

The expansion of mine production, transformation of transport between the largest mine at Khouribga and the chemical hub at Jorf Lasfar via slurry pipeline, and production of DAP fertilizer greatly increase the value-added from phosphates for Morocco, and place OCP in a position of newfound prominence in the international fertilizer industry. OCP has begun to benchmark itself alongside the largest and best managed national resource companies in the world, such as CODELCO of Chile and STATOIL of Norway.

To promote knowledge of modern management and technologies, OCP launched an institute (L'Institut d'Entreprise) for mid- and upper-level managers to learn new techniques and how to implement them. The institute offers instruction in operations, production, maintenance, purchasing, business strategy, risk management, finance, and audit. The institute also includes courses on human resources, communication and "soft skills" to help employees work together better.

Subsequently, this led to the creation of a full fledge university, Mohammed VI Polytechnic University, with an aim to bring a sustainable contribution to the general ecosystem. It is being developed as a land grant university in the new Mohammed VI Green City in Benguerir, 50 miles north of Marrakech. The Mohammed VI Polytechnic University's objectives extend beyond the scope of the original l'Institut d'Enterprise, aiming not just to develop human resources for OCP but to uplift skills for the Moroccan economy more generally.

The Mohammed VI Polytechnic University will emphasize R&D in areas critical to OCP Group's development (such as mining, sustainable development and industrial management) and to the economic, social, higher education and environmental future of Morocco. The new R&D center will include experimental laboratories dedicated to research in mining and chemistry, and provide the opportunity to attract qualified students and researchers from around the world who are proficient in these critical elements of business. This project promises to be a showcase for global collaboration on breakthroughs that will benefit the OCP industrial portfolio and address the crucial issue of global food supply. The Mohammed VI Polytechnic University will encourage entrepreneurship, nurture supplier firms, help them grow, engage them in R&D, and invest in their success. These activities can lead to the creation of technopoles across Morocco.

The Mohammed VI Polytechnic University makes use of close relationships with academic centers such as Massachussetts Institute of Technology and Columbia in the US, and HEC in France, for more advanced training. OCP's support for engineering and management studies at Mohammed VI Polytechnic University (in conjunction with l'Ecole des Mines de Paris and the Massachusetts Institute of Technology) prepares graduates to enter the Moroccan workforce in areas beyond what is specifically needed at OCP.

As OCP has reconfigured its structure and role as an international corporation, the contribution OCP brings to the Moroccan development process has changed dramatically. Domestically, OCP is changing from being a large purchaser of disparate inputs from some 1800 local suppliers into a shaper of the industrial base of the Moroccan economy. OCP can take a more active role in the consolidation, upgrade, and certification of its supplier base. Externally, OCP is leading the effort to move the Moroccan export base to a higher plane – both goods and services – while attracting international investors and creating

international partnerships in the process.

A central portion of OCP's program of industrial transformation – mine expansions, slurry pipeline, chemical complex – has benefited from the support of a joint venture formed with Jacobs Engineering, a leading global design and technical management firm headquartered in the United States. But the partnership with Jacobs Engineering also provides a vehicle for OCP to expand its activities as a technical service provider in areas such as energy generation and project construction, completely outside of the specific realm of mining/fertilizers. As OCP gains expertise and experience in providing engineering services with Jacobs Engineering, the door opens wider to earn profits – and bring in foreign exchange – from building up a portfolio of activities outside of the borders of Morocco.

In all, OCP has been tasked to foster positive externalities and spillovers to the product and labor markets of the Moroccan economy. The goal is to help Morocco to better insert itself into global value chains. Across many dimensions, OCP can foster the kind of sophisticated industrial policy that is important for a middle-income economy like Morocco.

The creation of the think tank, OCP Policy Center, is an example of this larger purpose to contribute to the structural transformation of the Moroccan economy. The OCP Policy Center undertakes to improve public policies through research, training, and the formation of partnerships with other leading think tanks around the world.

III. Tentative Conclusions and Suggestions For Further Structural Transformation of the Moroccan Economy

The preceding analysis shows that the Moroccan experience tracks quite closely with best practices of other emerging market economies that have made substantial progress in upgrading and diversifying the domestic production and export base. The key ingredients include efficient and effective investment promotion, backed by packages of infrastructure upgrades and public-private partnerships for vocational training.

Looking to the future, an outside observer would conclude that Morocco will want to continue to refine national and regional investment promotion functions, while working to improve the country's global-competiveness and doing-business indicators. At close look at the latter reveals one area of particular policy concern for the Moroccan economy.

1. On-going Improvement in Investment Promotion

The First Annual Best to Invest: The Top Investment Promotion Agencies of 2015 – backed by more through survey analysis from World Bank's Global Investment Promotion Best Practices: Seizing the Potential for Better Investment Facilitation in the MENA Region – cites Morocco's Agency in Charge of Promoting Foreign Direct Investment has having the most improved website of all countries surveyed. The Report praises the Moroccan Agency in Charge of Promoting Foreign Direct Investment for having an investment map that allows access with the click of a mouse to key information on various investment zones (including agro-poles), such as the zone manager, the sector, and the overall surface. In contrast to some other Investment Promotion Agencies, the Moroccan Agency in Charge of Promoting Foreign

Direct Investment makes extensive use of foreign testimonials by posting favorable messages from the chairmen of foreign chambers of commerce and foreign ambassadors to minimize the concerns of potential investors.

At the same time, the World Bank reports great improvement in the Moroccan Agency in Charge of Promoting Foreign Direct Investment's performance in handling investor inquiries. The Moroccan Agency in Charge of Promoting Foreign Direct Investment also follows Investment Promotion Agency best practices in specifying target sectors that are national priorities for FDI.

In general, however – across the entire MENA area – the World Bank finds that web sight design, Investment Promotion Agency responsiveness in handling inquiries, and follow-up with interested investors lags other regions. Recommendations for MENA Investment Promotion Agencies, following the lead of the Moroccan Agency in Charge of Promoting Foreign Direct Investment, focus on having Investment Promotion Agency make better use of investor testimonials – third-party endorsements from companies already established in the host economy offer first-hand credibility to the claims of Investment Promotion Agencies.

In addition, after identifying priority sectors for investment promotion, notes the World Bank, MENA Investment Promotion Agencies will want to train staff who specialize in addressing the specific needs of such sectors, whether industrial, agribusiness, tourism, or services.

Doubtless, the Moroccan Agency in Charge of Promoting Foreign Direct Investment has continued to add improvements in its practices and procedures over the course of 2015. A key question is whether Moroccan investment promotion will want to aim at sectors beyond those specified in the Plan Emergence.

2. On-going Improvements in Global Competitiveness and Doing-Business Indicators

It has become widely accepted that countries that want to attract foreign investment should try to improve the domestic business climate even though there are analytical controversies about how useful and accurate surveys such as the Global Competitiveness Index and the World Bank Doing-Business Indicators actually turn out to be.

What is striking is the discrepancy between the strength of Morocco's ranking in many categories, and the weakness of Morocco's ranking in others.

Morocco ranks within or very near the top third of 144 countries surveyed in the Global Competitiveness Index in: physical security (rank of 39), solid and efficient banking sector (rank of 42), quality of institutions (rank of 49), goods markets efficiency (rank of 49). In the important category of "ease of trading across borders", Morocco has a rank of 31, roughly comparable to Spain (rank of 30), in the World Bank Doing-Business indicators!

These offer a stark contrast with Morocco's grade for labor market efficiency (rank of 111), in the **lowest third** of all 144 countries surveyed. The Global Competitiveness Index report on Morocco 2014-2015 identifies "reforming the labor market" as one of the notable priorities for Morocco to improve its global competitiveness. ¹⁹ So does the Millennium Challenge Corporation (MCC *Compact with Morocco*, March,

^{19.} Klaus Schwab, World Economic Forum. The Global Competitiveness Report 2014-2015. P. 37.

2014). The US Department of State 2015 Investment Climate Statement for Morocco reports that "investors continue to view labor regulations as a significant constraint. They complain that procedures regarding lay-offs remain complicated and onerous, imposing a significant financial burden on companies."²⁰

It is important to recall that the preceding comparative analysis of countries that successfully used FDI to upgrade and diversify the economy highlighted labor market flexibility as a key ingredient for success. Malaysia received a Global Competitiveness Index rank of 19, Costa Rica a rank of 57, and the Czech Republic a rank of 62. For South Africa, in contrast, labor market rigidities were an impediment to success. South Africa received a rank of 113. Morocco's rank of 111 would seem to reinforce the importance of the Global Competitiveness Index recommendation that labor market reform become a focus of urgent attention.

A key focus for further discussion and analysis might be to examine how labor relations have been handled in Morocco's highly successful sectors – the aerospace sector, the automotive sector, and OCP's movement into chemical fertilizers – so as to draw lessons for how reforms might be introduced in other priority sectors where labor market rigidities might be an obstacle to expansion.

IV. From Comparative Analysis to Discussion of Challenges and Opportunities for Morocco, Looking Forward

This background paper began by noting that developing countries that manage to upgrade and diversify their export profile grow more rapidly and achieve greater welfare gains than countries that simply export larger volumes of what they have traditionally produced.

But the effort to upgrade and diversify a country's export profile – thereby changing the fundamental structure of the domestic economy – is beset with numerous difficulties and obstacles.

This discussion paper has sought to place such difficulties and obstacles in comparative perspective, identifying best practices for making progress, on the one hand, and examining tricky impediments that lead to failure, on the other.

The paper argues that Morocco's experience tracks closely the strategies of other emerging market countries that have managed to carry out a structural transformation of their economies. Pro-active investment promotion, infrastructure improvements, and public-private partnerships for vocational training of workers and managers in novel sectors of the economy, coupled with a reasonable amount of labor market flexibility are common factors necessary for success.

Now the aim of the workshop is to ask, from the perspective of on-the-ground practitioners who have played a role in the structural transformation of the aerospace, automotive, and fertilizer industries in Morocco, and in the renovation of Morocco's investment promotion agency, does this comparative analysis identify the key ingredients responsible for the country's success?

For those who know the Moroccan experience first-hand, what are lessons for future accomplishment in diversifying and upgrading Morocco's production and export profile? Finally, what are the key obstacles that must be overcome, looking to the future?

20. US Department of State. Investment Climate Statements 2015. Morocco, p. 24.

Appendix I

Manufacturing FDI Flows to Developing Countries (millions of dollars)

	1990-1992	2005-2007	2009-2011
	(annual average)	(annual average)	(annual average)
Lowest-Skill Sector			
Food, beverages and tobacco	\$512	\$1,693	\$3,622
Textiles, clothing and leather	\$130	\$439	\$1,063
Wood and wood products	\$116	\$363	\$623
Total	\$758	\$2,496	\$5,308
Higher-Skilled Sectors			
Publishing, printing and reproduction of printed materials	\$0	\$48	\$56
Coke, petroleum products and nuclear fuels	\$113	\$1,659	\$1,448
Chemicals and chemical products	\$544	\$2,514	\$4,335
Rubber and plastic products	\$22	\$186	\$771
Non-metallic mineral products	\$126	\$555	\$1,015
Metals and metal products	\$212	\$2,375	\$4,828
Machinery and equipment	\$190	\$2,531	\$1,778
Electrical and electronic equipment	\$284	\$1,714	\$3,142
Precision instruments	\$20	\$22	\$161
Motor vehicles and other transport equipment	\$212	\$754	\$2,136
Other manufacturing	\$129	\$311	\$691
Unspecified Secondary	\$2,302	\$22,119	\$31,049
Total	\$4,155	\$34,788	\$51,411

Source: UNCTAD data base 2014

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