



**YASAR UNIVERSITY**  
*Department of Economics*

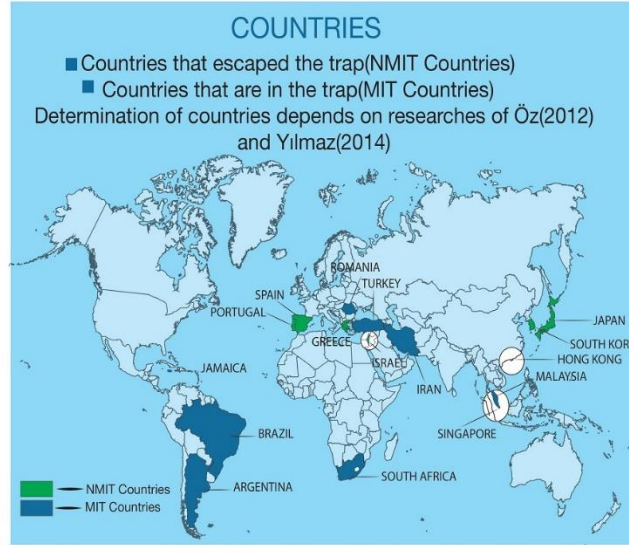
**2019-2020 (Fall) Poster Presentations**

# MIDDLE INCOME TRAP

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## INTRODUCTION

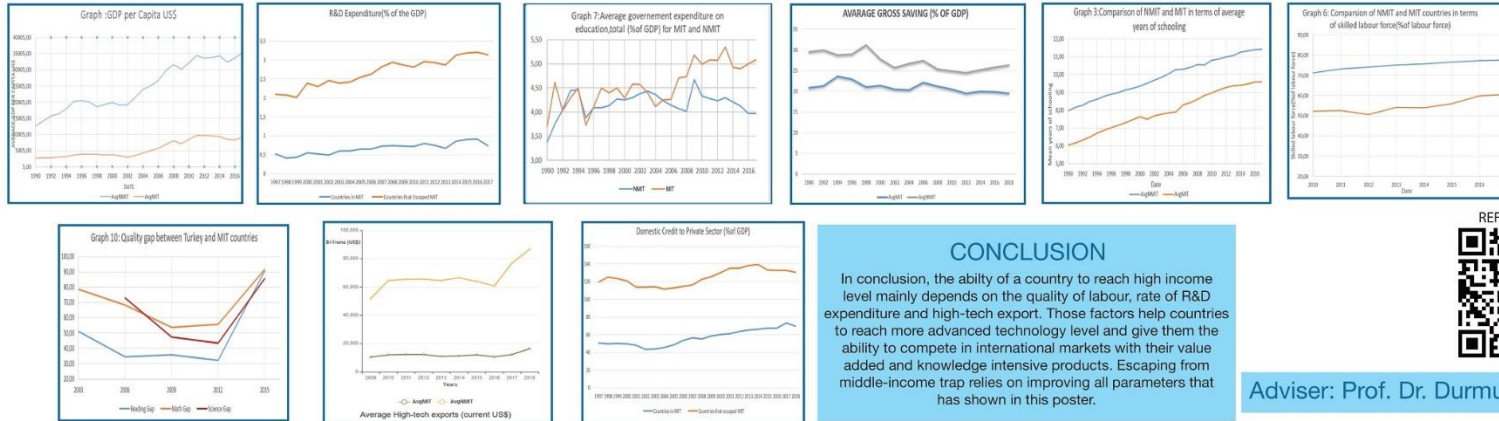
Middle-income trap(MIT) is a situation where countries get stuck at a certain GDP per capita level for a long time and unable to increase their income level due to lack of high-tech production and skilled labour force.



## Parameters that effect middle income trap

1. GDP per capita
2. High technology export
3. Research and development expenditure(% of GDP)
4. Gross saving(% of GDP)
5. Average years of schooling
6. Skilled labour force(% of labour force)
7. Government expenditure on education(% of GDP)
8. Domestic credit to private sector(% of GDP)
9. Quality of Education

## Parameter Comparison of MIT and NMIT countries in terms of their Average



## CONCLUSION

In conclusion, the ability of a country to reach high income level mainly depends on the quality of labour, rate of R&D expenditure and high-tech export. Those factors help countries to reach more advanced technology level and give them the ability to compete in international markets with their value added and knowledge intensive products. Escaping from middle-income trap relies on improving all parameters that has shown in this poster.

## REFERENCES



Adviser: Prof. Dr. Durmuş Özdemir

# RELATIONSHIP BETWEEN TOURISM REVENUES AND ECONOMIC GROWTH FOR SELECTED COUNTRIES

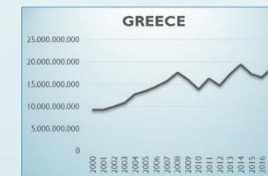
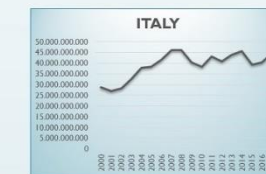
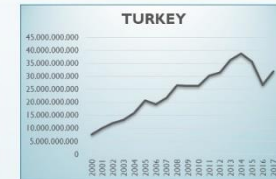
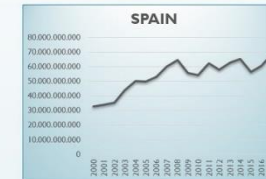
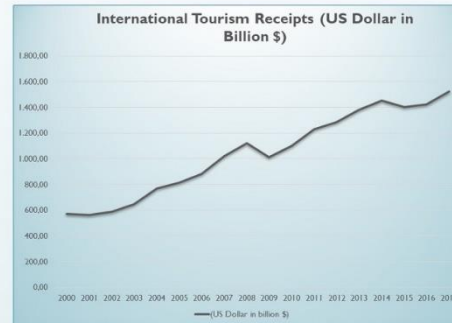
DILARA SAHINLER & HALUK KORAL & BURAK BAYRAKTAR & YAGMUR COLAKOGLU & BUSRA DEMIRLI

## INTRODUCTION

- The tourism sector in the world is gaining great potential. Since the 20th century, tourism has been the fastest growing sector in the world economy.
- Tourism is also of great importance in terms of eliminating foreign deficits and foreign exchange revenues provided to countries and contributing to the financing of budget deficit.
- The scope of this study is selected five Mediterranean countries (Turkey, Spain, Greece, Italy, Malta) within the period of 2000-2017 and the relationship between tourism revenues and economic growth are examined and discussed.

## GROWTH & TOURISM

- Tourism, one of the most critical service sectors, has become a pivotal position to increase the welfare level of the country by accelerating its economic growth, especially in developing countries with tourism potential.
- Tourism revenues are particularly influential on the main factors affecting economic growth, such as the balance of international payments, tax revenues, foreign exchange inflows, employment, and income levels.
- According to the World Tourism Organization, income from international tourism has increased to the US \$ 1,526 trillion in 2017 (UNWTO, 2017). In 2000, tourism revenue was the US \$ 570.988 billion worldwide, and in 2017, tourism activities rose to the US \$ 1,526 trillion, an indicator of recovery.



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- Mediterranean countries have been one of the leading countries in terms of tourism revenues in recent years. Italy and Spain are the two leading countries in this sense. In addition, the fact that tourism in selected countries is a tool for economic growth should not be overlooked. The table below shows the ranking of selected countries in the world and the Mediterranean.

Countries	World Ranking	Mediterranean Ranking
Spain	3	2
Italy	7	3
Turkey	13	4
Greece	23	6
Malta	89	17

SUPERVISED BY DOC.DR. UMUT HALAÇ



## IMPACT OF UNEMPLOYMENT AND INFLATION ON ECONOMIC GROWTH IN TURKEY

by Selen YÜKSEL-Kutluay ÇELİK-Hatice Nur UYSAL  
Oğuzcan ÇAKAR-Aslıhan ÖZDEMİR

ADVISOR Meltem İnce YENİLMEZ



### INTRODUCTION

Inflation and unemployment are the two main variables affecting economic growth for the countries. The crisis is undoubtedly one of the most important factors that have deteriorated economic growth. Structural deterioration between unemployment and inflation in the economy has negatively affected economic growth in Turkey.



### LITERATURE

Literature studies examining the effect of unemployment and inflation on economic growth have different results. A one-way causality relationship was determined by Göktas Yılmaz (2005) from unemployment to economic growth and by Kanca (2012) from economic growth to unemployment.

Berber & Artan (2004), Türkekul (2007), Uysal and etc. (2008) have reached the conclusion that there is one-way negative causality relationship from inflation to economic growth. Taban (2008), Karaçor etc. (2011), Çetin & Yeşiloğlu (2018) supported this idea by making studies showing that the same negative relationship exists both in the long and short term. However, Karagöl and etc. (2005) and Artan (2008) have found a two-way causality relationship between the two variables in the long run.



### DATA

- In this study, the dependent variable is GDP Growth, the independent variables are Inflation GDP deflator, unemployment rate and foreign exchange rate.
- Annual time series data will be collected from TUIK, OECD, ILO, World Bank and Eurostat for between 1987 and 2018.
- This study will be included Southeast Asian Crisis, 2001 Economic Crisis which occurred in Turkey and 2008 Global Crisis as dummy variables.



### EQUATION

$$\Delta GDP = \beta_0 + \beta_1 (\Delta UN) + \beta_2 (\Delta DEF) + \beta_3 (\Delta ER) + \delta_1 D_1 + \delta_2 D_2 + \delta_3 D_3 + \varepsilon$$

GDP: Change in the gross domestic product (GDP) growth rate  
UN: Change in the unemployment rate  
DEF: Change in the inflation rate: GDP deflator  
ER: Change in the foreign exchange rate  
 $\varepsilon$ : Error term  
D1: Southeast Asian Crisis  
D2: 2001 Economic Crisis  
D3: 2008 Global Crisis



### METHODOLOGY

Ordinary least squares (OLS) regression is an analysis method that predicts the relationship between the independent variable and a dependent variable; The method estimates the relationship by minimizing the sum of the squares in the difference between the estimated values of the dependent variable being configured as a straight line. OLS regression is discussed in the context of a two-variable model, that is, a model with only one independent variable (X) predicting a dependent variable (Y). However, the OLS regression logic can be easily extended to a multivariate model with two or more independent variables.



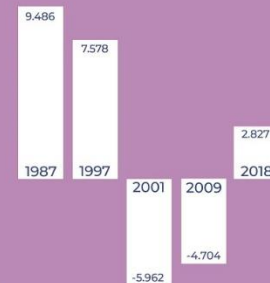
### CONCLUSION

It will be explained by testing whether they are positive or negative the impact of unemployment and inflation on economic growth in Turkey. Structural breaks that experience during this time period 1987 and 2018 such as the crises will also be considered in reviewing the Turkey's economic growth. This project is expected to prove that the relationship between inflation-economic growth and unemployment-economic growth are inversely related.



### THE AIM OF THIS PROJECT

The study will aim to demonstrate that how has the impact of unemployment and inflation on economic growth changed between 1987-2018 and to show the impact of crises in this process on economic growth.



THE WORLD BANK





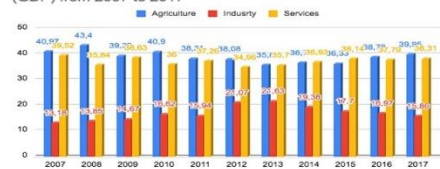
Melisa ARAS Mehmet Azad DENLİ Sercan AYDEMİR Akif KAYACAN Arda ÖZDEMİR

\* This research's main question is how does deindustrialization impact on economy according to underdeveloped, developing and developed countries with the reasons of deindustrialization?

The share of the industrial sector in employment and output has a decreasing trend and points to the economic and social consequences of this loss the loss of industrial capacity.

- The main reason for non-industrialization is that production grows faster than yield.
- Deindustrialization is not a negative phenomenon, but natural consequence of further growth in developed economy.
- The key cause of deindustrialization is that productivity in manufacturing grows faster than services.
- Future growth in the developed world is likely to be due to increased productivity in services.

Niger: Share of economic sectors in the gross domestic product (GDP) from 2007 to 2017



- \* Employment in manufacturing as a part of total employment has been falling dramatically.
- \* De-industrialization has created a significant concern in the affected economies.



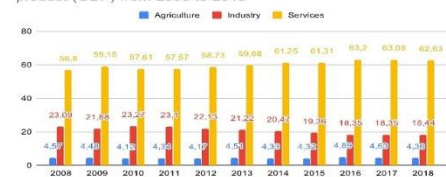
**A**

Red line is Argentina  
 Grey line is Brazil  
 Green line is Chile  
 Blue line is Mexico

**B**

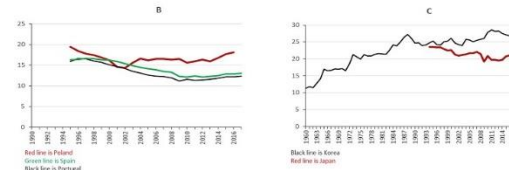
Red line is South Africa  
 Black line is Italy

Brazil: Share of economic sectors in the gross domestic product (GDP) from 2008 to 2018

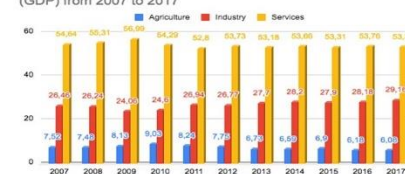


The deindustrialization of developing countries and the abandonment of the industry without making sufficient contribution to the growth of the manufacturing industry has the potential to create an obstacle for the growth of these countries.

Two types of indicators were used to understand the structure of change in manufacturing sectors while examining selected countries. The first of these is the share of manufacturing industry in Gross Domestic Product (GDP).



Turkey: Share of economic sectors in gross domestic product (GDP) from 2007 to 2017



- Declining share of the manufacturing industry in GDP,
- Decrease in the ratio of those employed in the manufacturing industry,

- Declining share of the manufacturing industry in GDP,
- Decrease in the ratio of those employed in the manufacturing industry,

- Those who migrate from rural areas to urban areas work in small jobs or in the service sector instead of in the manufacturing industry

- When the effects of de-industrialization on employment are examined, it is seen that the low-skilled labour force receives the heaviest blow
- In underdeveloped countries, both employment and real value added have declined strongly.
- Decreasing industrialization emerges as employment losses, increasing inequalities and declining innovative capacity for developed countries. For underdeveloped countries, however, it has serious economic and political consequences.

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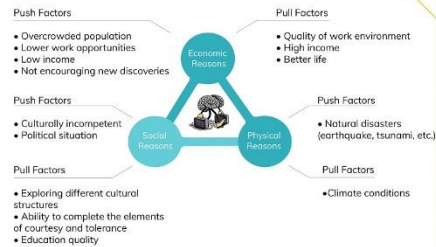
## DEPARTMENT OF ECONOMICS - SENIOR PROJECT IN ECONOMICS - I THE IMPACT OF BRAIN DRAIN ON ECONOMIC GROWTH: CASE OF TURKEY

Advisor : ASST. PROF. FATMA NUR KARAMAN KABADURMUŞ  
Büğra KILIÇ, Egemen Berk DEMİRKAPI, Hasret Gizem GÜMÜŞ, Oğuzhan AKSOY, Selim Kartal SAFYÜREK

### MOTIVATION

**Brain Drain:** The international transfer of human capital resources  
It applies mainly to the migration of highly educated individuals from developing to developed countries.  
Many studies shows that human capital is a key factor for economic growth and sustainability. Therefore, the aim of the project is to study the effects of brain drain on economic growth.

### FACTORS AFFECTING BRAIN DRAIN



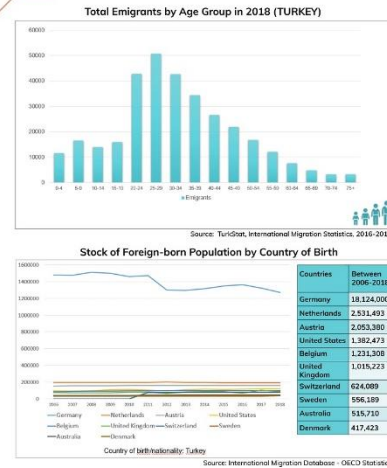
### TURKEY'S PROJECTS TO REVERSE BRAIN



### LITERATURE REVIEW

AUTHORS	TITLE	DATA & METHODOLOGY	FINDINGS
Beine, M.A., Docquier, F. and Rapoport, H. (2003)	Brain Drain and LDCs' Growth: Winners and Losers	• US data on migration rates by education levels • Panel data regression analysis	• Brain drain appears to have negative growth effects in countries where the migration rate of the highly educated is above 20%
Tunali, I. (2003)	Background Study on Labour Market and Employment in Turkey	• Wage Structure • Rural Employment	• Turkey's population is characterized by low levels of human capital (as measured by formal schooling)
Özden, C. & Schiff, M. (2007)	International migration, economic development and policy	• The book includes several chapters on micro, macro and case studies	• Increase in remittances leads to a reduction in migrant-household poverty • Migration has a positive impact on all measures of educational attainment
Altug, S., Filizetin, A. and Pamuk, S. (2008)	Sources of long-term economic growth for Turkey, 1980-2005	• Growth-accounting approach	• Human capital considerations appear critical at key junctures of Turkey's growth experience.
Filizetin, A. (2009)	Regional Unemployment in Turkey	• Data: General censuses (1980-2008) • Spatial and nonspatial techniques	• Wide general unemployment disparities • Human capital and demand deficiencies are the sources of observed disparity across provinces.
Di Maria, C. and Lozonova, E.A. (2012)	Migration, Human Capital Formation, and Growth: An Empirical Investigation	• 130 developing countries for 1990 and 2000	• 70% of the population in the sample suffers lower growth as a consequence of skilled migration
Stankovic, M. (2015)	Science And Innovation Policy in Southeast Europe: Brain Drain As Brain Gain	• Overview of the main theories that support brain drain and brain circulation in developing countries	• Reasons behind brain drain: agglomeration of human capital where it's already in abundance & host country immigration policies target highly educated immigrants.

### DATA



### METHODOLOGY

$$\ln \left( \frac{y_{it+T}}{y_{it}} \right) = \alpha + \beta_0 \ln y_{it} + \beta_1 M_{it} + \beta_2 X_{it} + \beta_3 D_{it} + \varepsilon_{it}$$

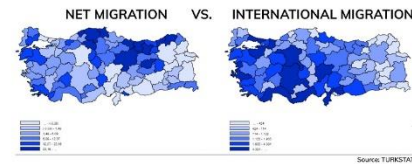
$y_{it}$ : GDP per capita in province / at year  $t$  for the first period.

$\beta_0$ : convergence coefficient. Indicates convergence if negative (Barro and Sala-i Martin, 1995).

$M_{it}$ : net migration rate in province between period  $t$  and  $t+T$ .

$D_{it}$ : Dummy if migration to foreign countries is higher than national average (43.5%).

$X$ : set of control variables (public investment to GDP ratio, population growth, education).



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- Barro, R.J. and Sala-i-Martin, X., 1995. Economic Growth". McGraw Hill. Boston MA.
- Gezi, F. and Hewings, G.J., 2004. Regional convergence and the economic performance of peripheral areas in Turkey. Review of Urban & Regional Development Studies, 16(2), pp.113-132.
- Migration Data Portal <https://migrationdataportal.org/show-stock-perc.-for-2018-on-49-490>
- OECD (Migration) <https://www.oecd.org/migration/>
- TURKSTAT (Migration) <http://www.turkstat.gov.tr/en/Bilgi-oy-747-44-41>





# THE IMPACT OF INDUSTRY 4.0 ON EMPLOYMENT IN TURKEY

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Will unemployment increase or decrease?

Does Industry 4.0 affect production and technology?



## Objectives

Industry 4.0 primarily aimed at the digitalization of operations and the integration of production with technology. This study aims to reveal the prospective effects of the industry 4.0 on the current structural unemployment rates in such a conjuncture, the reasons and the solution proposals for policymakers. Moreover, the possible contributions of the new business dynamics of industry 4.0 to employment will be discussed in the light of economic theories such as creative destruction theory.

- To provide the brief literature review about the effect of Industry 4.0 on employment.
- To indicate the reflections of industry 4.0 on production process and technology.
- To review possible changes in unemployment types.



## Introduction

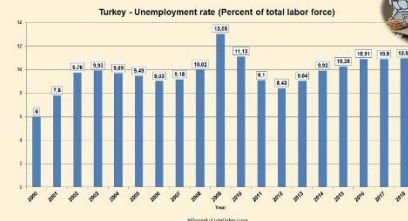
Industry 4.0 will provide a more skilled labor force that supports economic growth of Turkey in the increasing global competition chain. Although technological innovations that have emerged since the first industrial revolution have increased unemployment level in the short-run, these effects may accelerate employment level in the long-run. In more detailed, the demand for white-collar and blue-collar workforce will be replaced by a skilled labor force.



## Data and Methodology

- The dependent variable of this model is the **unemployment rate**.
- The independent variables of this model are **R&D as a percentage of GDP**, **Employment of Higher Education as a (thousand people)**, **Medium and High technology export as a percentage of manufactured export**.
- Which will be estimated by OLS method and time series analysis between 2003-2016 years for Turkey.

$$UN_t = \beta_0 + \beta_1 RD_t + \beta_2 EMPH_t + \beta_3 MEDH_t + \epsilon_t$$



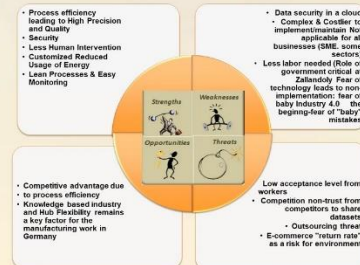
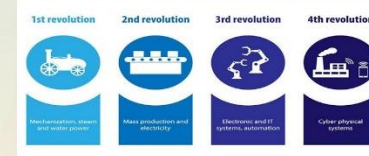
Will some professions disappear?

How does Industry 4.0 affect employment?



## What is industry 4.0?

Industry 4.0 opens up a world's door where the physical equipment, parts, tools and machines that complete the production process will communicate with each other over the information technology. Industry outputs of complex physical machines and devices, which are integrated with software and network sensor devices, offer a new economic value.



## Literature Review

Study of	Data & Methodology	Result
Yildirim and Şenel (2017)	The content analysis method is employed to analyze the answers from the participants. Study was conducted with a working group of 13 people determined by criteria sampling and 10 persons.	Impacts of Industry 4.0 in two main categories: First - organizational level impacts and individual level impacts, second - positive impacts and negative impacts.
Amoghesh and Bhaaskar (2013)	Examine entrepreneurship, innovation and economic growth of OECD countries for the years between 2001 and 2009 by using panel data analysis.	Impact of innovation has become more important and higher in the presence of a positive institutional framework
Güler (2013)	Perform panel data analysis for horizontal cross-sectional dependence, using data from 11 Asian countries in the period 1996-2012.	Developing countries need to produce and export high value-added technology products for high and sustainable economic growth
Ayale (2018)	Examine the relationship between technological progress in Turkey's employment structure by the AKDL method for the years 1981-2015.	Technological progress has changed the employment structure in line with high demand for employment.
Uzay (2012)	With exports that have made Turkey's manufacturing industry between 1995-2005 R&D spending, generalized least squares method.	The currency exchange rate changes, can impact on the performance of the manufacturing industry in Turkey.