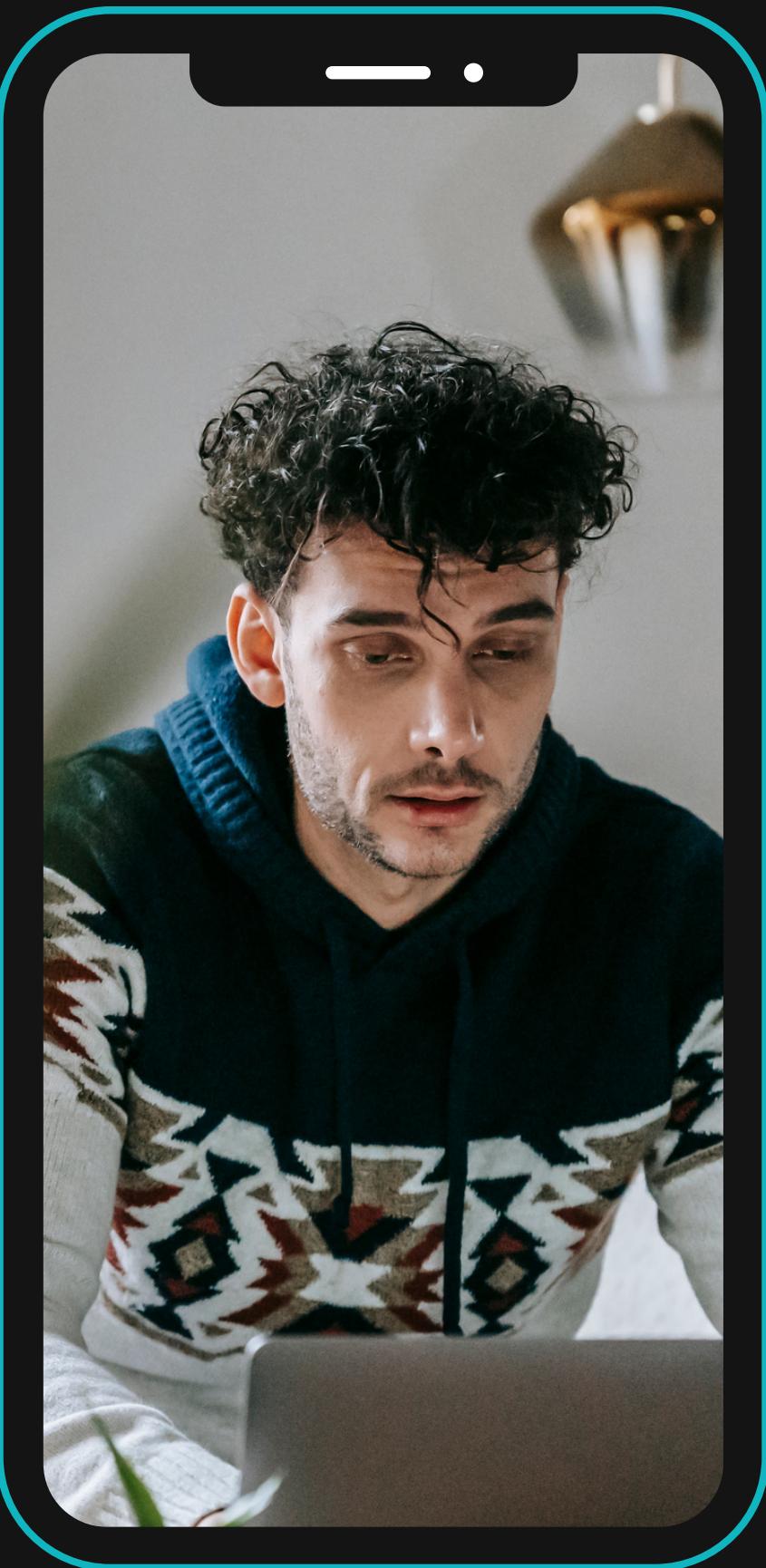


Data Visualization

# What affects to the employment rate of Kazakhstan?

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# Problem

Today people finding it hard to choose a career path they would follow and even after doing so job market is tough to get through and get hired.



# Relevance

The given project is willing to address multiple problems of job searchers in this market: starting from choosing the right and in-demand profession, finding a job that is suitable for you.

# Goals



Addressing unemployment problem in Kazakhstan among fresh graduates

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Identify a highly paid area in Kazakhstan

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Analyzing jobs by regions

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Identifying connection between world events and job market in Kazakhstan

# Hypothesis

1.

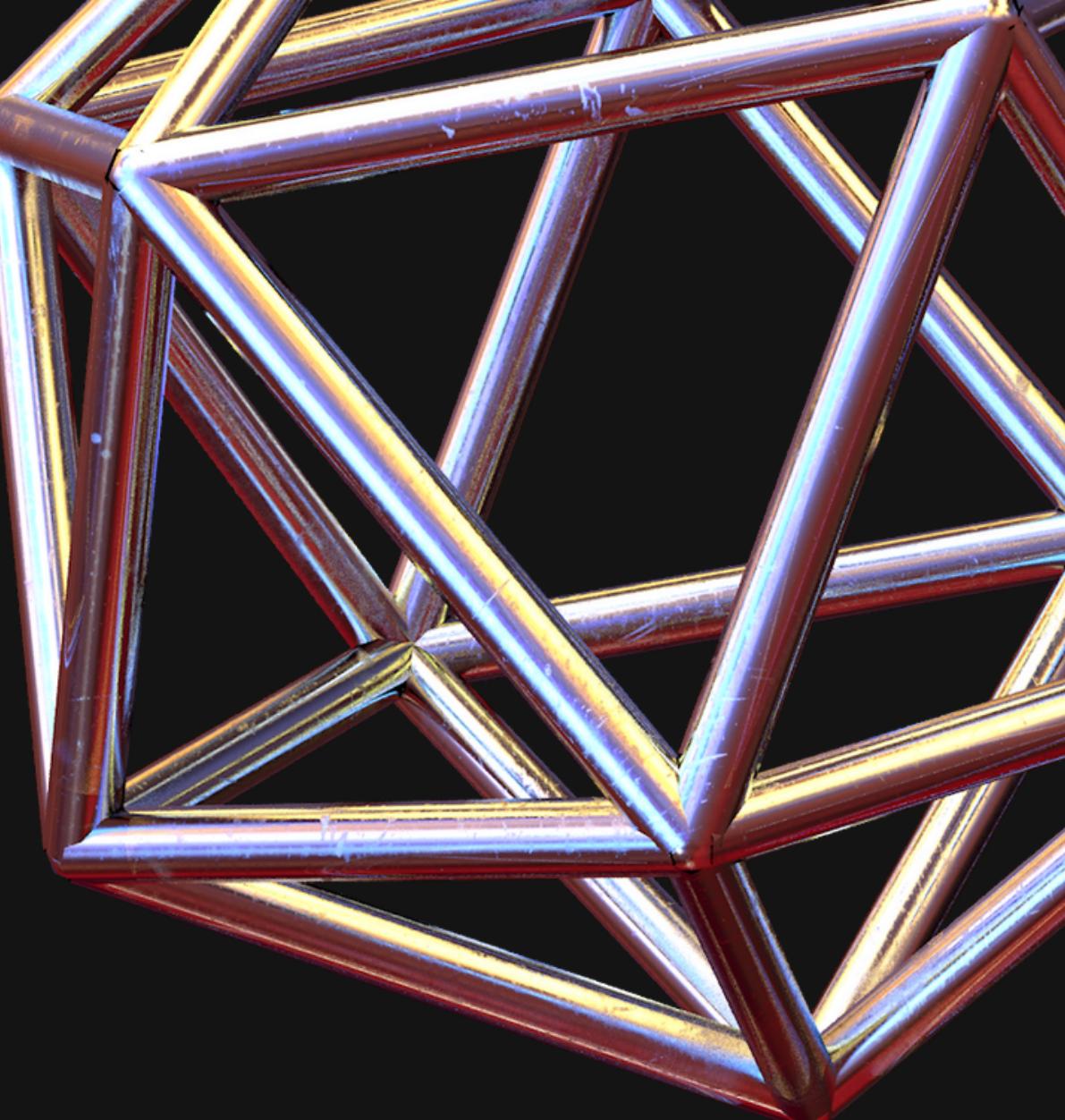
Jobs in the IT sector have become more in demand over the past 7-10 years.

2.

It is easier to find a job in larger regions.

3.

Influence of major events in the world on the demand for professions and salaries.



# Background

Bhat revealed that inflation, trade openness and the exchange rate are negatively associated with employment elasticity. At the same time, a positive association is established between the service sector employment share, the population growth rate and employment elasticity of output growth.

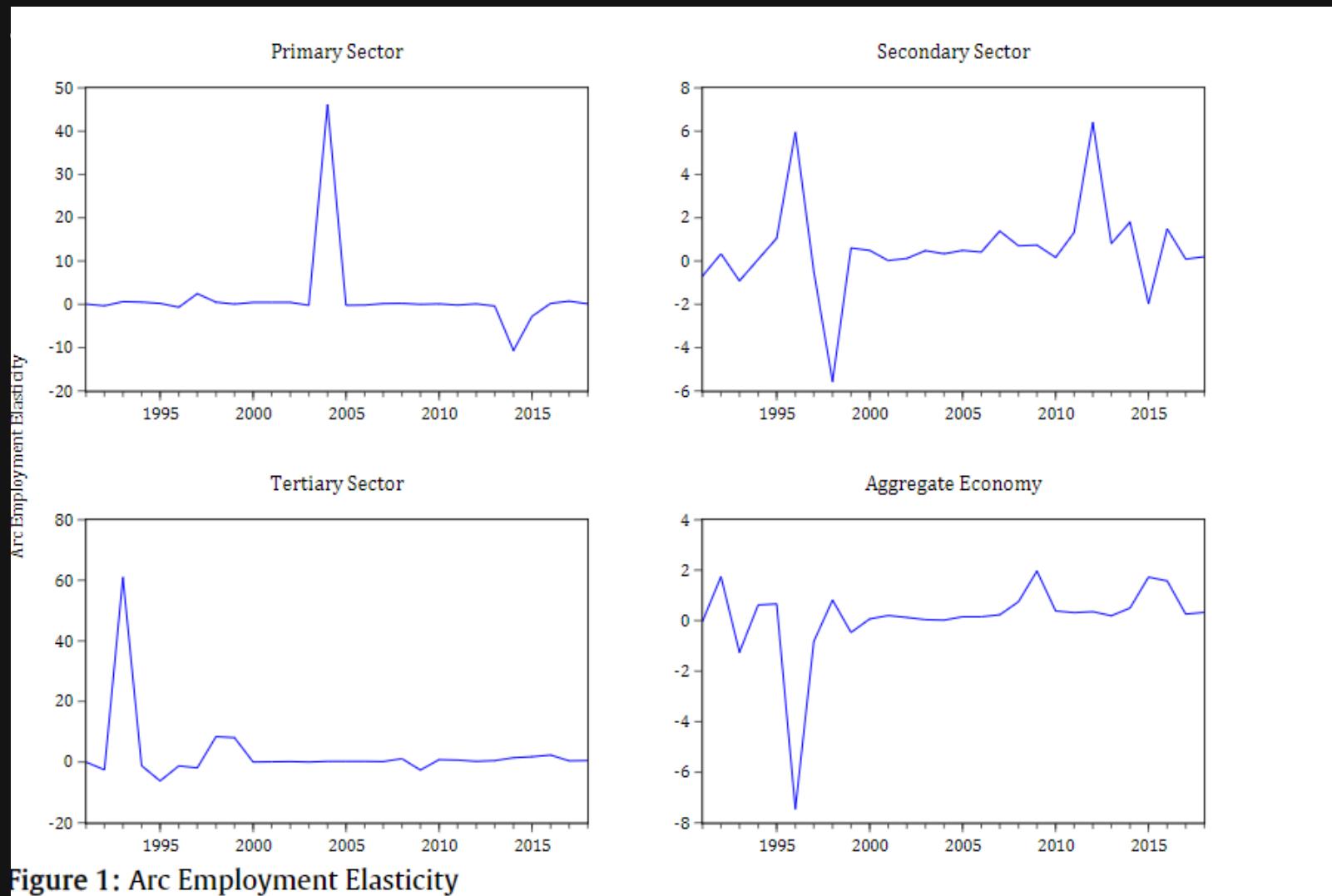


Figure 1: Arc Employment Elasticity

Variables	Symbol	Source
Consumer Price Index	CPI	IFS-IMF
Service Sector Employment Share	SES	WDI Data Bank
Exchange Rate	EXR	IFS-IMF
Trade Openness	TO	WDI Data Bank
Import Propensity Ratio	IPR	WDI Data Bank
Population	POP	WDI Data Bank
Employment Elasticity of Output Growth	EEOG	Own Calculation

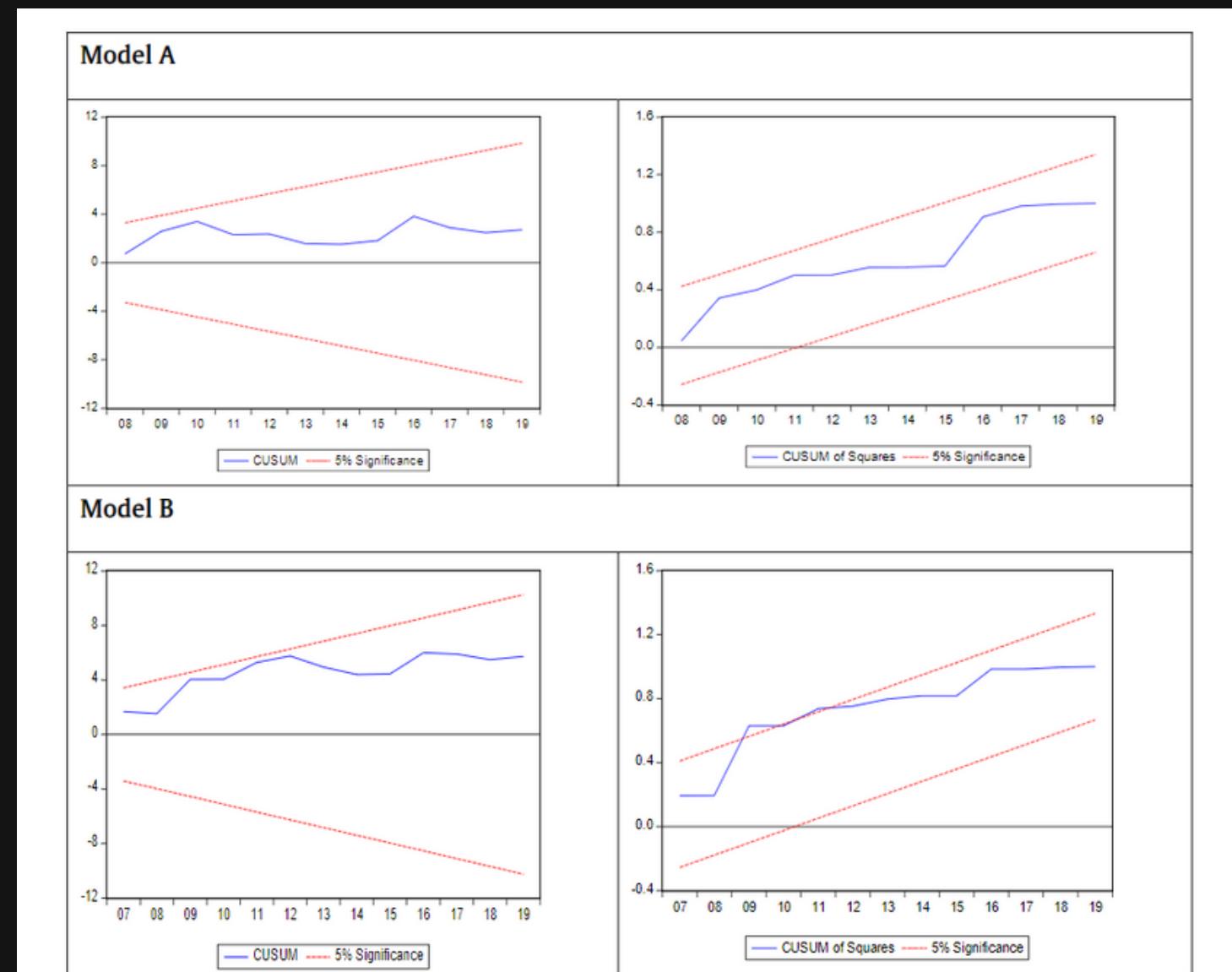
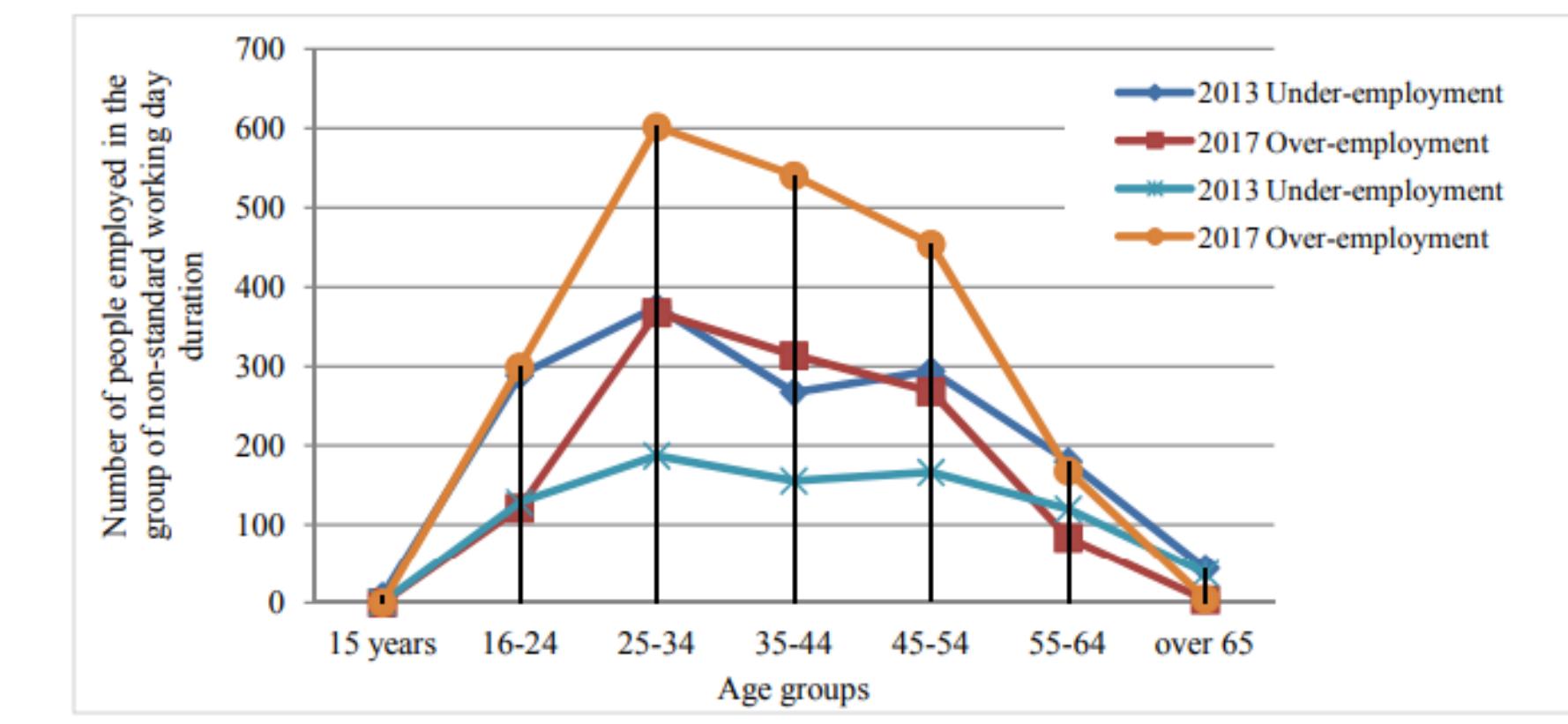
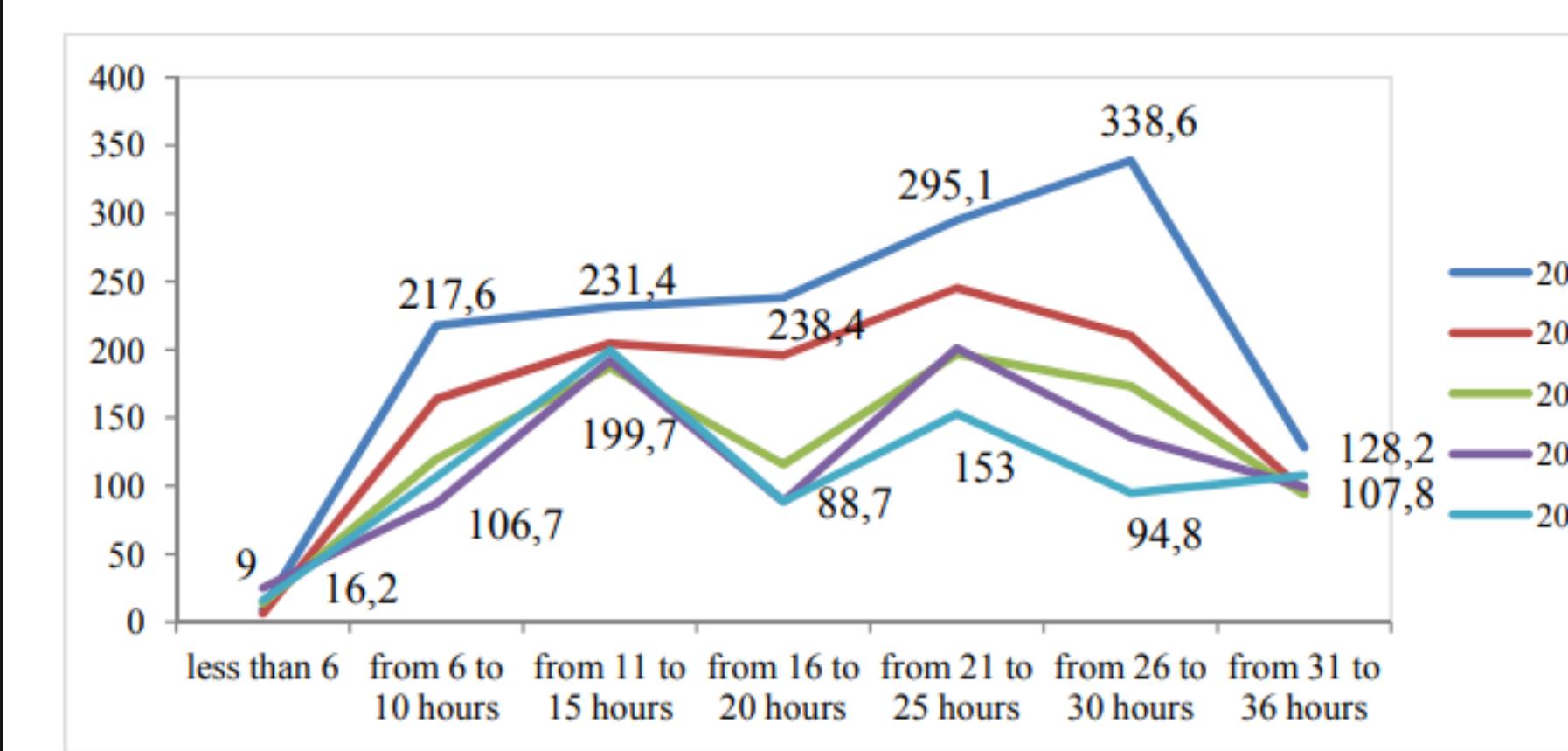


Figure 3: CUSUM and CUSUMSQ

# Background

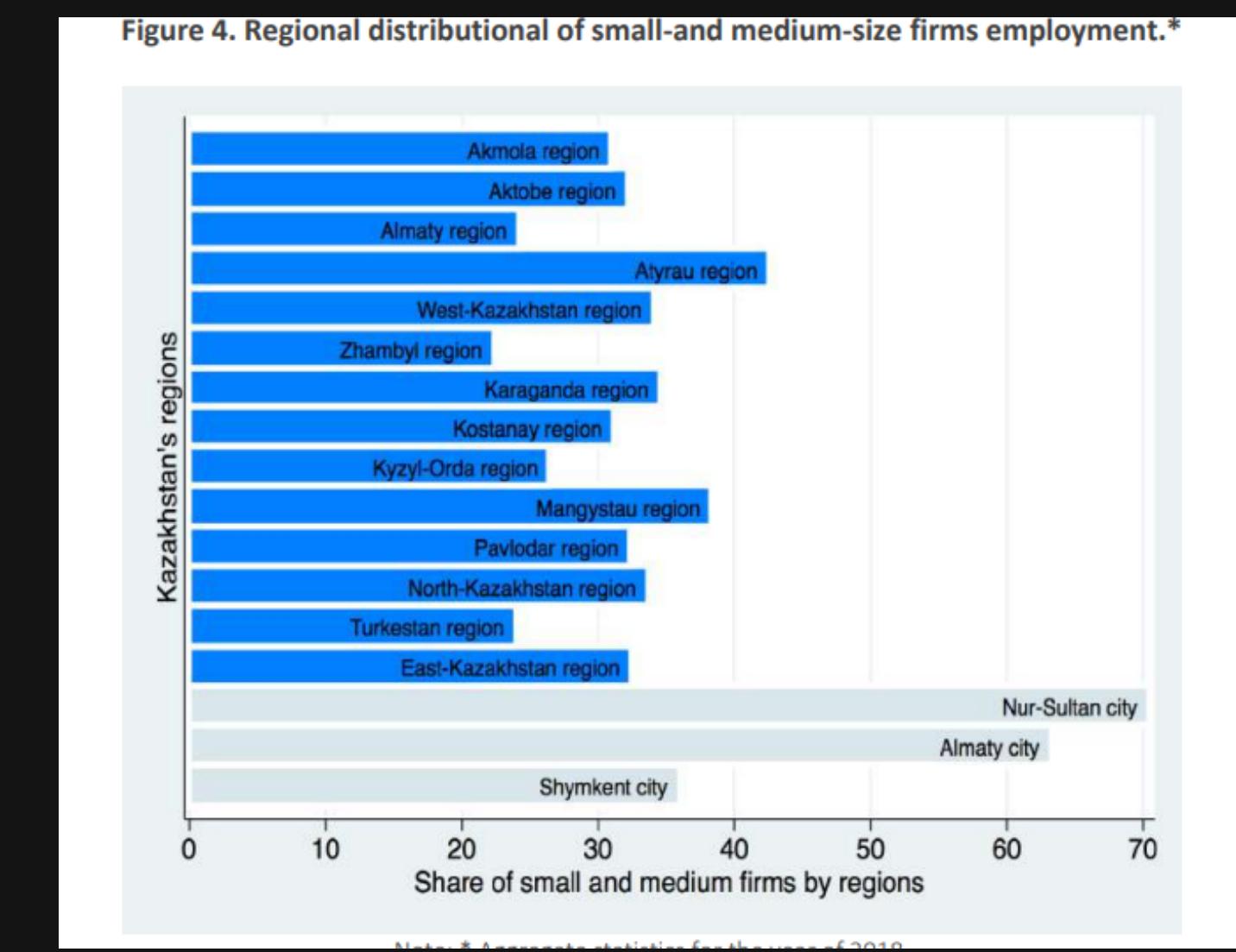
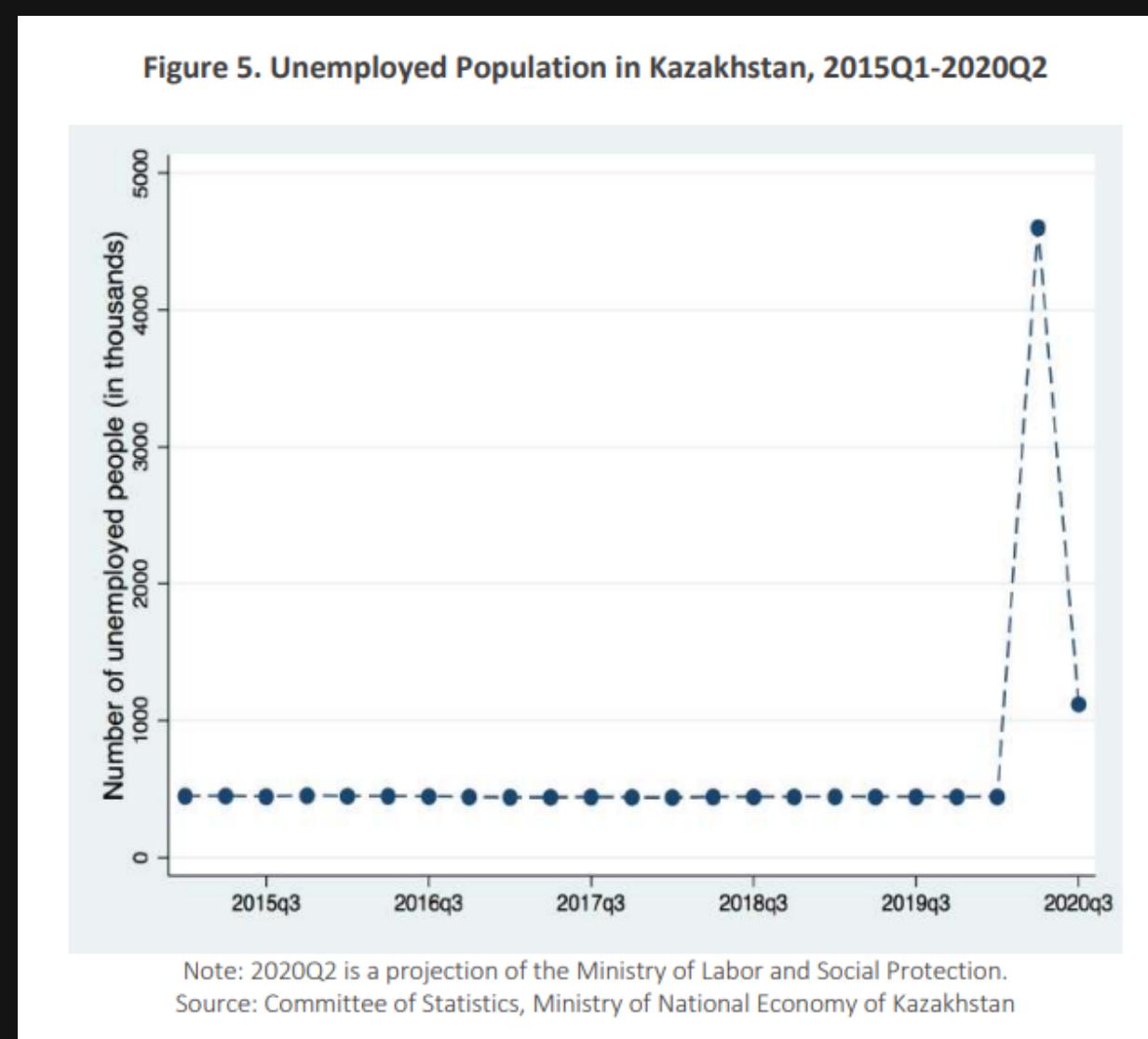
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- Atabayeva suggest that the burden of part-time employees has decreased, which is one of the signs of a forthcoming crisis, when the number of part-time employees and their duration of working time are reduced and their services are primarily refused
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# Background

- Ybyrayev showed that Covid19-induced negative supply shock and subsequent quarantine measures differentially affects the service sectors, driving productive activity in certain industries down to zero. Also, characterized by a higher share of informal employment and a greater absorption of small firms, service industries are at the greater risk of business failures and voluntary closures due to blanket lockdown policies



# Data

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- Platforms with statistics of Kazakhstan  
stat.gov.kz - main dataset
- Data from websites with major events



# Dataset fields

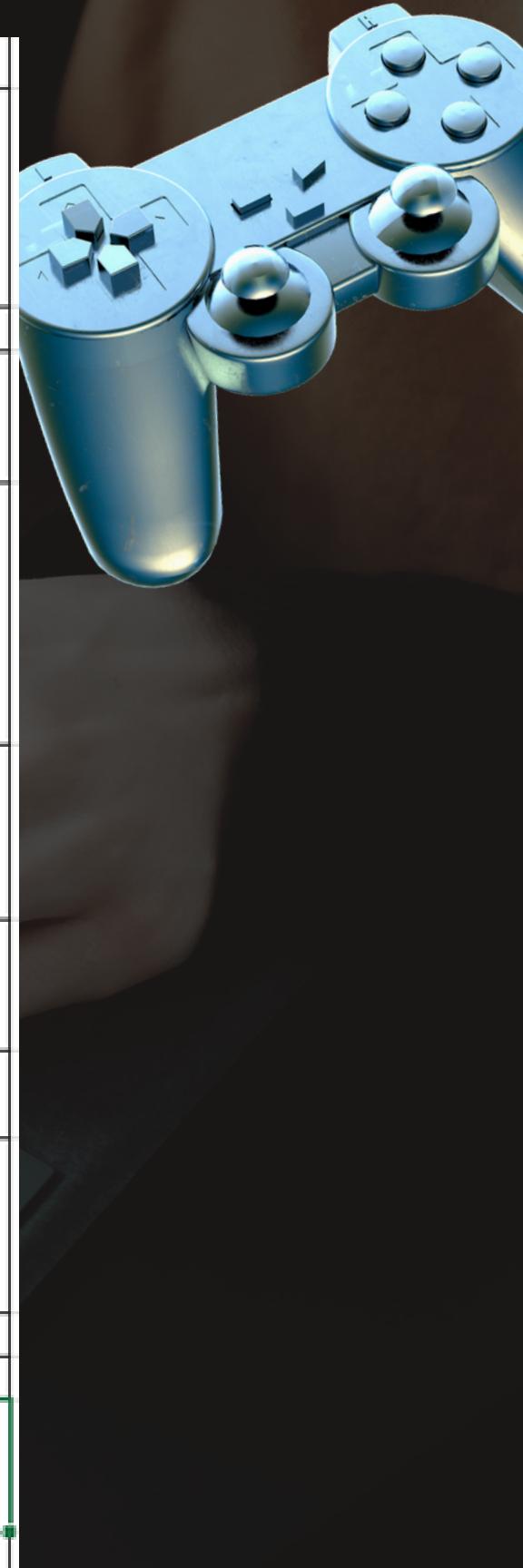
Feature name	Explanation	Remarks
<b>Region</b>	The region of Kazakhstan	
<b>Year</b>	Year	
<b>Month</b>	Month	
<b>Flag_events</b>	Were there any major events in this month (period). If not - 0, if there were minor events - 1, if there were major events - 2.	Data will be collected from various sources on the Internet manually
<b>Avg_salary</b>	Amount of average salary	
<b>#of employee, ths</b>	Number of employee	
<b>Youth_rate, %</b>	Rate of young people (15-28 y.o.)	
<b>Age_group</b>	Age group. There are 2 age groups: 15-28 (according to International Standard) and Others.	
<b>Edu_type</b>	Type of education: high and incomplete high education secondary professional education basic, secondary, general, primary education	
<b>Activity_type</b>	type of economic activity	
<b>Emp_type</b>	type of employment: wage-earners self-employed workers unemployed	
<b>Gender</b>	Type of gender: Male or Female	
<b>Loc_type</b>	Location type: City Village	
<b>Unemp_rate, %</b>	Unemployment rate	
<b>Man_days</b>	Number of man-days per 1 employee (per year)	
<b>Min_salary</b>	The amount of minimal salary	
<b>Indexing, %</b>	The rate of indexing (compared to last year)	

# Example of filling fields

Feature name	Values
Region	Алматы
Year	2010
Month	январь
Flag_events	1
Avg_salary	92462
#of employee, ths	183
Youth_rate, %	5,8
Age_group	15-28
Edu_type	high and incomplete high education
Activity_type	IT and connection
Emp_type	wage-earners
Gender	male
Loc_type	city
Unemp_rate, %	5,5
Man_days	220
Min_salary	14952
Indexing, %	115,3

# Example of world events and their rates

Period	Flag_events	News
2010-01		1 - earthquake in Haiti 2 - the crew of the International Space Station received direct access to the Internet 3 - The Customs Union of Russia, Belarus and Kazakhstan came into force.
2010-02		1 election of Viktor Yanukovych as President of Ukraine
2010-03		Grigory Perelman has been awarded a \$1 million prize for proving the Poincaré conjecture. This is the first ever award for solving one of the Millennium Problems.
2010-04		1 - revolution in Kyrgyzstan 2 - Eyjafjallajökull volcano eruption in Iceland 3 - The world's first tablet laptop, the iPad, from Apple, went on sale in the United States. 4 - Europe's first 3D TV channel launches in Britain 2 5 - The world's first solar-powered aircraft made its first test flight.
2010-05		1 - In early May, Greece was engulfed in strikes and mass protests against government plans to drastically cut public spending. 2 - In Japan, the robot I-Fairy held the world's first official wedding ceremony
2010-06		1 - the main stage of the Mars-500 project has started 2 - international exhibition Electronic Entertainment Expo 1 3 - 1st Android Robot Olympic Games 2010 (Harbin, China)
2010-07		Roza Otunbayeva took office as the President of the Kyrgyz Republic 2 in transition, becoming the first female president in the CIS
2010-08		1 - In August, Pakistan was the victim of catastrophic floods, the worst in 80 years. 2 - US President Barack Obama officially announced the end of the 1 military operation in Iraq
2010-09		0 -
2010-10		1 The Instagram app has been released
2010-11		1 - NATO summit in Lisbon 2 - protest in London and Rome by schoolchildren and students 1 against education reform and higher tuition fees
2010-12		1 OSCE summit in Astana (Kazakhstan)



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