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ARDL

.(Mete et al., 2006)

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Krueger & Grossman   (2001) Antweiler et al.   .

(1994) Lopez   (1993)

E-mail: hmehrabi2000@gmail.com   :   :   *

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Antweiler et al..

(2001)
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(1999) Chua .

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Strutt & .

(2000) Anderson

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Madrid .

(1998)

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(1995) Beghin & Poitier .

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.(Dina, 2004) (1993) Grossman & Krueger

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(1985) Singh .

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( ) EKC (2005) Frankel & Rose .

EKC .

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Pajoyan & Moradhasel .

(2007)

.(Pajoyan & Moradhasel, 2007)

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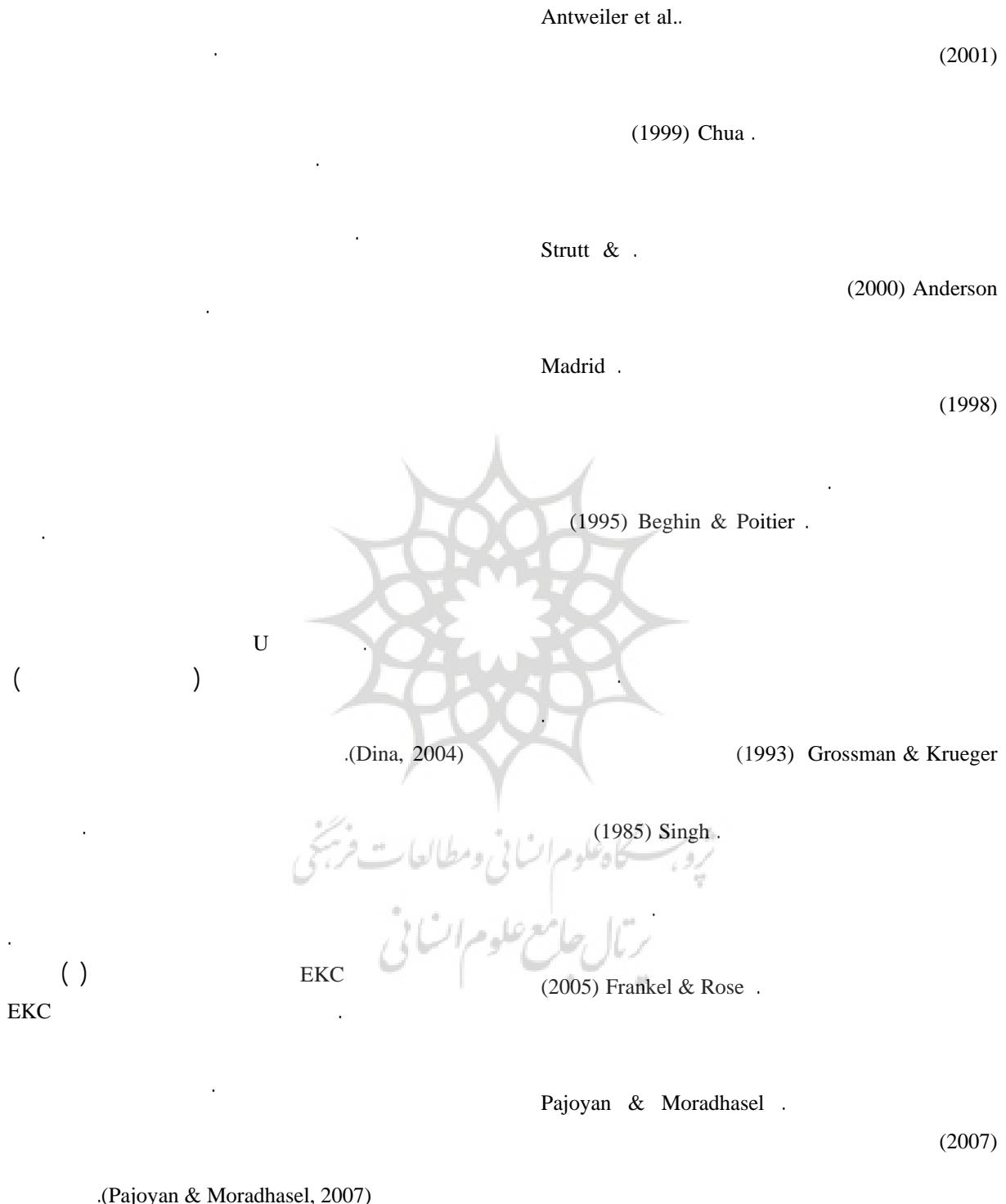
1. Environmental Kuznets Curve
2. Clean agrarian economy
3. Polluting industrial economy

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:Xit

(GDP) (k) :K

(EX) (IM) :(q1,…,qi)

)

(SPM, CH, SO3, SO2, NOX, CO2 (CC) :P

(l) . :Wt

(ADF) . ARDL($\hat{p}, \hat{q}_1, \ldots, \hat{q}_k$) ( )

Wt,Yt,X1t,…,Xkt

Microfit4 .

(

(ARDL) (ECM)

$$\Delta Y_t = -\phi(L,P)\widehat{EC}_{t-1} + \sum_{i=1}^{k}\beta_i \Delta X_{it} + \delta' \Delta W_t - \sum_j \phi_j^* \Delta Y_{t-j} - \sum_{i=1}^{k}\sum_{j=1}^{\hat{q}_i}\beta_{ij}^* \Delta X_{it-j} + U_t$$

.

ARDL (p,q1,q2,….qk)

ECt-1 :

( )

. $$\varphi(L,P)Y_t = \sum_{i=1}^{k}\beta_i(L,q_i)X_{it} + \delta'W_t + \varepsilon_t$$ (

$$Q(L,P) = 1 - \phi_1 L - \phi_2 L^2 - \ldots - \phi_p L^p$$

$$\beta_i(L,q_i) = \beta_{i\circ} + \beta_{i1} + \ldots + \beta_{iqi}L^{qi}$$

i=1,2,……,k

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: :L

LYt=Yt-1

:Yt
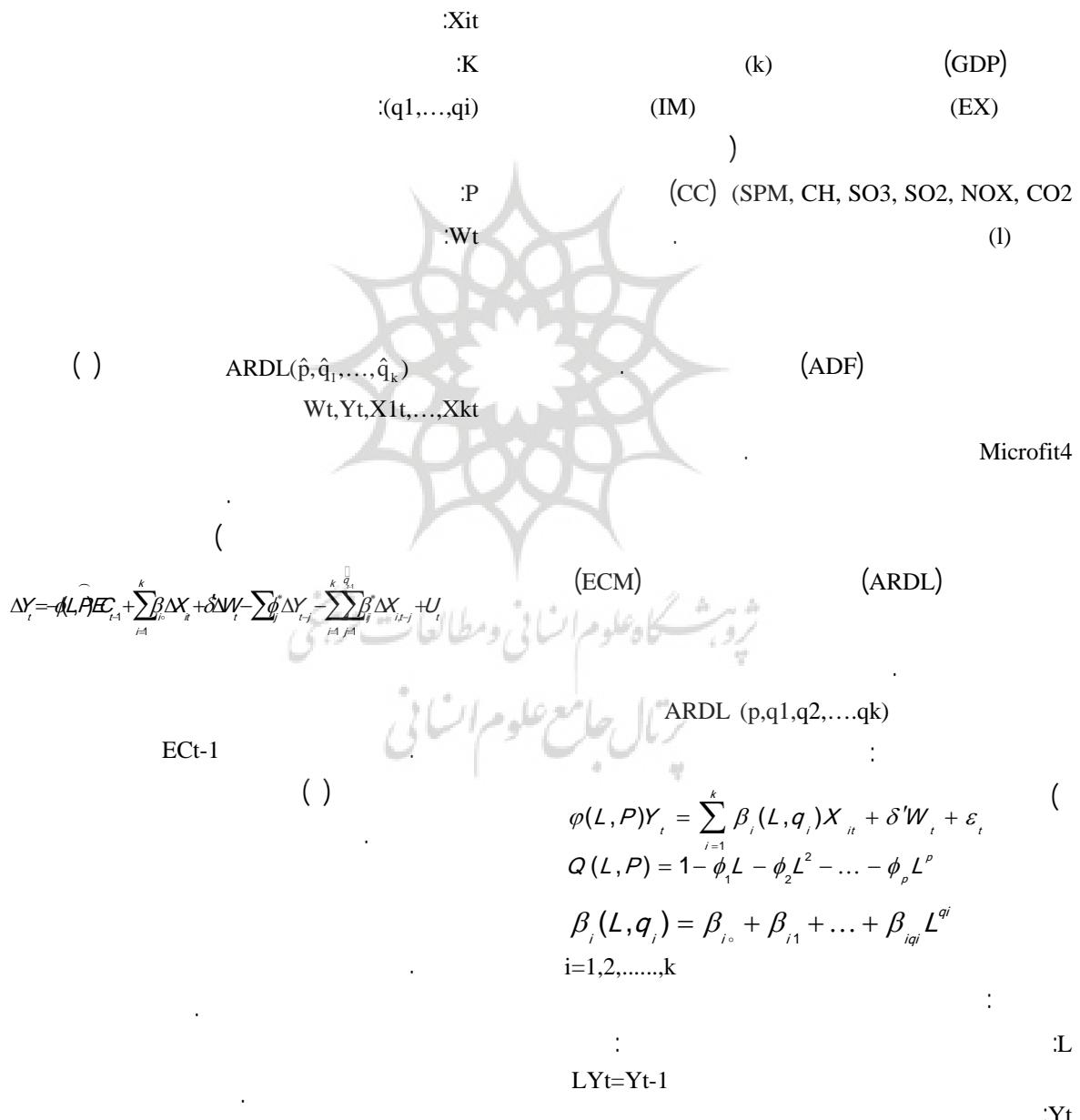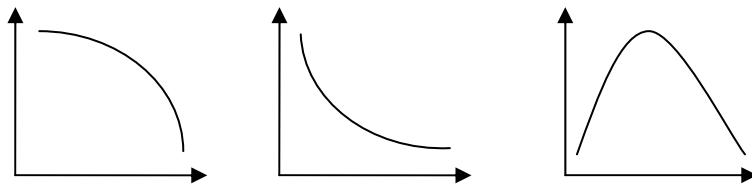
Beghin & (2006) Mete et al.

(1995) Poitier

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1. Augmented Dickey Fuller
2. Auto Regressive Distributed Lag
3. Error Correction Model

$$Openness = \frac{X_t + M_t}{GDP_t}$$

(LIT)

GDPt   Mt   Xt

(LIT)

.

:(Kalbasi & Jalaie, 2002)

(SPM)

Co2   ,CH ,SO3 ,SO2 ,NOX ,Co ,CO2

$$LIT_t = \frac{X_t - M_t}{Y_t + M_t - X_t}$$

(( )   )

Co   Yt   Mt   Xt ( )

.   LIT .

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(Openness)

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1. Level of International Trade

:

NOX	SO2	CO2	SO3	CO	CH	SPM
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Energy Balance Sheet :

۵۰۰۰۰ ۴۰۰۰۰ ۳۰۰۰۰ ۲۰۰۰۰ ۱۰۰۰۰ ۰

۱۳۴۶ ۱۳۴۹ ۱۳۵۲ ۱۳۵۵ ۱۳۵۸ ۱۳۶۱ ۱۳۶۴ ۱۳۶۷ ۱۳۷۰ ۱۳۷۳ ۱۳۷۶ ۱۳۷۹ ۱۳۸۲ ۱۳۸۵
سال

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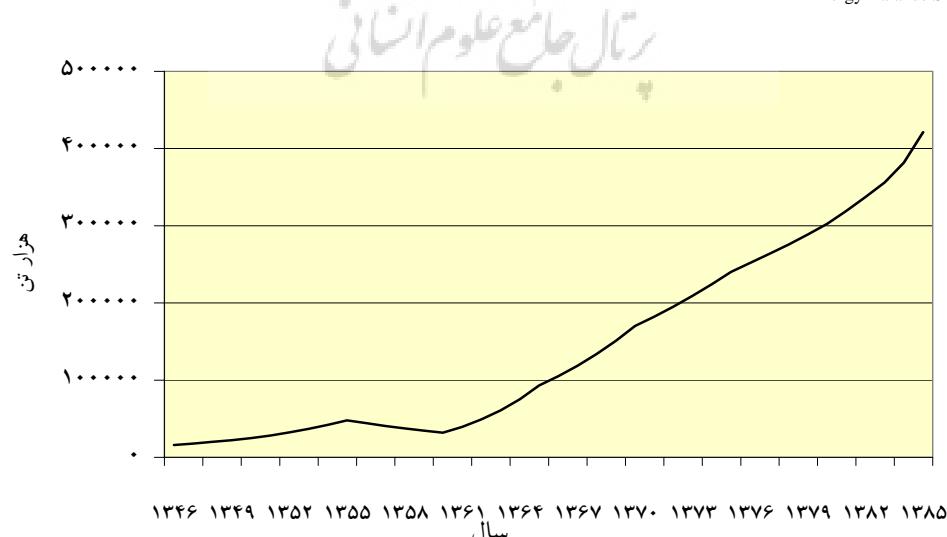
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(GDP)   (CC)   Du .

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%   t   L

(k)   (.
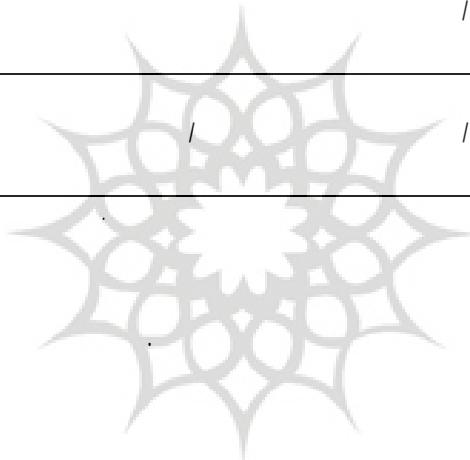
Openness   (l)

$LCC= - / + / LCC (-1) + / LGDP-$

$/ LLIT + / Du + / L(K/L)$

$(- /) (/) (/) (- /) (/) (/)$) Openness   LIT

$\overline{R}^2 = /$ F= / 	D.W= / (

(LIT)

( )

.   /

$$\frac{\sum_{i=1}^{p} \hat{\phi}_i - 1}{\sum_{i=1}^{p} S_{\varphi i^\wedge}}$$

(

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( )

.

$S_{\hat{\phi}i}$ $\hat{\phi}_i$:

.

( )   (Openness)   :

$$\frac{0/68-1}{0/07} = -4/57$$ (

.

$$\frac{0/65-1}{0/08} = -4/37$$

.

LCC=- / + / LCC(-)+ / LGDP-   (
/ LOpenness+ / Du+ / L(K/L)
(/)(/)(/)(- /)(/)(/)

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(LIT) $\overline{R}^2 = /$ F=   /   D.W= /

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(LIT)

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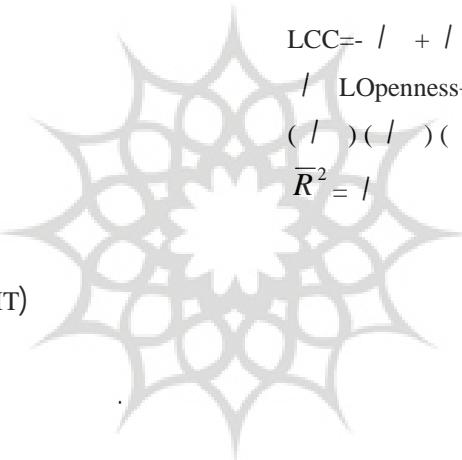
LCC=- / - / LLIT+ / LGDP+ / L(K/L)   (
(- /) (/) (/) (/)

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( )

LCC=- / - / LOpenness +LGDP + / L(K/L) (
(/) (/)(/) (/)

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(Openness)

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GDP   .

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1. Banerji & Dolado   .   /

:

(LIT)

:

$DLCC = -/ + / \ DLGDP - / \ DLLIT + / \ DU ($
$+ / \ DL(K/L) - / \ ECM$
$(\ /\ )(\ /\ )(-\ /\ )(\ /\ )(\ /\ )(\ /\ )$
$\overline{R}^2 = /$ F= /   D.W= /

(LLIT)   ( )

GDP

/   (ECM)

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(Openness)

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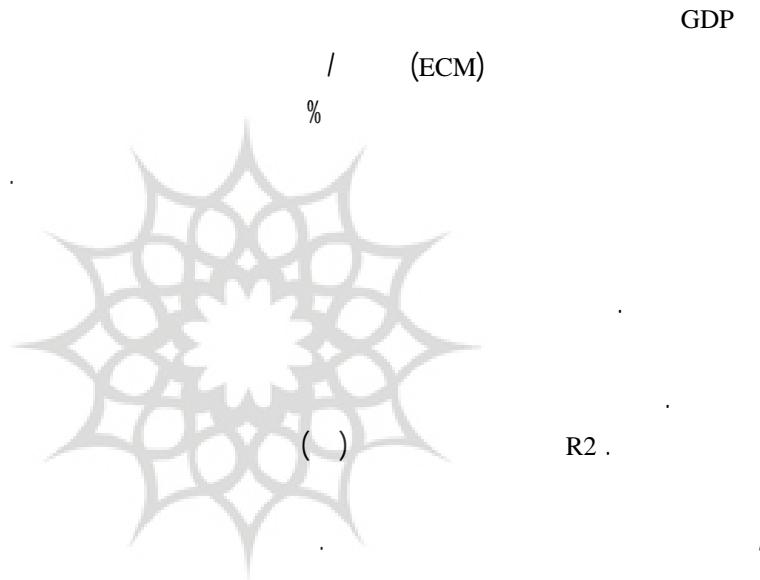
$DLCC = / + / \ DLGDP - / \ DL \ openness + ($
$/ \ Du + / \ DL(K/L) - / \ ECM$
$(\ /\ )(\ /\ )(-\ /\ )(\ /\ )(\ /\ )$ ( )
$\overline{R}^2 = /$ F= /   D.W= /

GDP

...

/   (ECM)

سرانه آلودگی (هزار تن در سال)

| ۲.۶۹ | ۳.۹۴ | ۸.۵۶ | ۷.۲۹ | ۵.۶۶ | ۴.۴۷ | ۴.۳۵ | ۴.۶۴ | ۴.۸۹ | ۵.۹۴ |

سرانه GDP (میلیون ریال در سال)
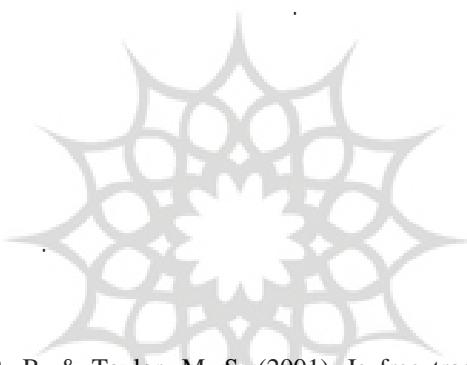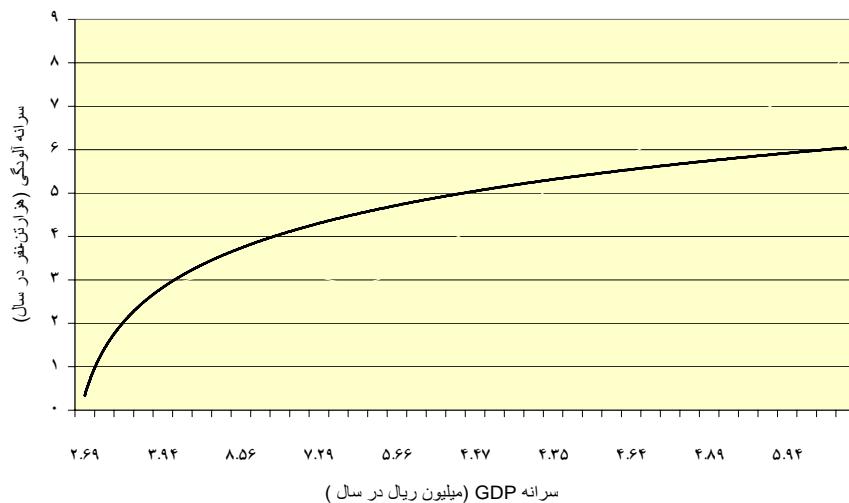
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Impact of Trade Liberalization on Environment Pollution in Iran

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ABSTRACT

Liberalization of international markets affects level of pollution in developing countries more than developed countries. Therefore impact of trade liberalization on environment pollution is a challenge for policy makers. In this paper we use Auto Regressive Distributed Lags (ARDL) and Error Correction model (ECM) methods for study the relationship between trade liberalization and environment pollution in Iran, in long run and short run. Results indicated that pollution is negatively related to trade intensity and openness, while capital to labor ratio and gross domestic product (GDP) are positively related to pollution. Results also show that trade liberalization in the long run can solve environmental problems. At Last, this paper analyzes the Environmental Kuznets Curve for Iranian economies.

Key words: Environmental pollution, Trade liberalization Indexes, ARDL, Iran.

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