Macroeconomic Factors Affecting Real Estate Markets in Turkey: A VAR Analysis Approach [1],[*]

Meltem S. Ucal* and Gıyas Gőkkent**

*Faculty of Economics & Administrative Sciences, Department of Economics,
Kadir Has University, Istanbul, 34083, Turkey.*
**College of Business Administration, Abu Dhabi University and Head of Research,
National Bank of Abu Dhabi, Abu Dhabi, U.A.E.*

Turkish real estate markets have, until relatively recently, been characterized by an absence of a widespread mortgage system, high interest rates, high intermediation spreads – described in detail in Gokkent et al. (2005) -, and a desire by banks to lend for relatively short terms and/or in foreign currency. A vector autoregression model is employed in order to examine macroeconomic factors that affect real estate markets in Turkey. A large number of variables were examined and found to have a relatively small impact. These included exchange rates – not particularly surprising, given that housing is a non-traded good; in any case, its filtered effect on inflation was directly captured by the inclusion of a variable for consumer prices – and interest rates – again, not surprising given the lack of a longstanding mortgage market because of macroeconomic instability. A finding of this article is the importance of innovations in CPI in accounting for a relatively larger share of the variability in home prices, a result that is consistent with the view of homes as an anti-inflationary hedge and a reflection of chronic macroeconomic instability in Turkey. The result for wages indicates that income change is not crucial in determining home prices, again, a result that is supported by other country studies. **JEL codes: L85, H5, C51.**

---

[1] Short excerpts, not to exceed a brief paragraph, may be quoted provided full credit is given.

Introduction

In the past decade, multilateral financial institutions, such as the International Monetary Fund, have come to focus on factors affecting financial stability across countries. While foreign currency, equity, and money market indicators have long been used to gauge financial stability, the significance of the real estate market and its interplay with the business cycle has recently attracted greater attention in the literature[2].

This paper thus contributes to the literature because, first, it examines the Turkish real estate market – on which few studies exist -, and second, the emphasis is on the macroeconomic linkages to this market. It is only a first step in this direction, however, as it suffers from limited data availability.

Different types of real estate, usually classified according to category of use[3], may have distinct features. While all are affected by some common key factors, the degree of significance of each factor may vary for different types of real estate. Real estate market determinants may also be disaggregated to microeconomic[4] and macroeconomic variables, with the focus

here being on the latter.

Literature Survey

Collyns and Senhadji (2002) cite imperfect information[5], supply rigidities[6], imperfect financial markets[7] as being defining characteristics of real estate markets. These contribute to creating a market vulnerable to prolonged deviation of fundamental value[8] from actual value, namely an asset price bubble.

Tsatsaronis and Zhu (2004), as well as Kalra et al (2000), distinguish between demand and supply factors which are further broken down to short run and long run determinants. The latter are said to include growth in disposable income and demographics on the demand side, and variables like construction costs, land availability on the supply side. Other determinants include the state of the regulatory framework, taxes and interest deductibility of mortgage payments, and real interest rates - cost of borrowing.

Hilbers, Lei, and Zacho (2001) overview several key real estate cycle mechanisms. In the fixed supply and overoptimistic investor model[9], some investors' payment of above

---

[2] Some salient features of this interplay are eloquently described by Bernanke (2002).
[3] Residential, commercial, industrial, and sub-categories of each, and so on.
[4] Microeconomic factors comprise number of units, location, use type, type of construction, age of unit, size, number of rooms, utility and facilities, physical condition, last sales date and value, current market value, tax valuation, vacancy rate, occupant status (owner, tenant), rental information, and building permits.

[5] "Investors either underestimate or overestimate the fundamental price".
[6] In other words, demand factors dominate in the short run, while supply factors adjust in the long term.
[7] In efficient financial markets, any deviation whereby fundamental price was less than actual price would be countered by short-selling of real estate.
[8] Replacement value.
[9] Backward looking expectations would lead to

replacement cost price for housing combined with supply inertia, pushes up prices. This is only temporary until supply gradually rises. Eventually, prices fall, and as overoptimistic investors rush to get out of the market, prices fall further. Construction lags and imperfect information have also been used to model real estate market behaviour.

Tsatsaronis & Zhu (2004) observe that the most developed OECD member countries have experienced about two full real estate cycles between 1970 and 2003, specifically, in early 1980s and 1990s. Helbling, T. and M. Terrones (2003) examine industrial countries in the post-war period and find that "equity price busts occurred on average once every thirteen years lasting for 2.5 years and were associated with GDP losses of roughly 4% of GDP. Housing price busts were less frequent, but lasted twice as long and output losses were twice as large. To qualify as a bust, housing price contraction had to exceed 14%, compared with 37% for equities". Hilbers et al (2001) point out, however, that countries such as Finland, Malaysia, Mexico, and Spain have experienced relatively fast boom and bust cycles spanning only a few years. Price declines are usually gradual, lasting three to eight years for their sample of countries.

Krainer (2003) points to two stylized facts of the US housing market. First, changes in house prices apparently display strong persistence due to adjustment inertia in this market[10]. Second, nominal house prices do not usually fall, but merely flatten out. This according to the author suggests that home purchases are both investment and consumption motivated.

---

serial correlation in real estate markets. See also Capozza et al (2002).

[10] Persistence being indicative of imperfect markets.

Real Estate Markets in Turkey

The Turkish experience may, to a large extent, also be described by the various real estate market mechanisms listed above depending on the time span examined. In addition, an important factor affecting the Turkish real estate market in the past decade has been a natural disaster[11], the 1999 Marmara earthquake. Its impact was profound because 37.8% of Turkey's GDP originated in this region[12] according to the Turkish Statistical Institute (Turkstat).

Chronic financial instability has been a constant feature of the Turkish economy in the past three decades. While demographics is indisputably a significant long term factor affecting real estate markets in Turkey, changes in income have demonstrated sharp swings at short intervals particularly in the past two decades in Turkey. In contrast to the industrialized countries` recent experience of a smooth trade cycle once a decade or so, the Turkish economy contracted in 1973, 1980, 1991, 1994, 1999, and 2001, exhibiting extreme swings in most of these cycles. The Turkish real estate market has also exhibited extreme volatility,

---

[11] One may naturally question why an earthquake would have such a deep impact when such an event may not be as dominant in terms of impact on the real estate market in other quake prone countries like Japan, for instance. The plain answer is that while earthquakes in Eastern Turkey are rather common occurrences, they have been less frequent in and around Istanbul – Marmara region - in the past century or so. Thus, the impact of unexpected disasters on asset prices may be greater.

[12] The quake occurred very close to Izmit, Turkey's industrial heartland. Its effects were also visible two hundred kilometers away on the outskirts of Istanbul, the commercial center of the country.

although the trough reached in 1999, for instance, did not have at its root economic factors, but a devastating earthquake[13] as mentioned earlier.

The Turkish real estate markets have until relatively recently been characterized by an absence of a widespread mortgage system, high interest rates, high intermediation spreads – as described in detail in Gokkent et al. (2005), currency volatility, desire to lend only short term or in foreign currency given that the sovereign average borrowing tenor is about 21[14] months and weighted deposits mature in three months[15]. However, rural migration[16] and fast population growth

– though slowing[17] – has resulted in a construction boom in cities in the past decades. Greater purchases by foreigners have also been a factor, at times controversial, in real estate markets.

Macroeconomic instability has meant that most could not afford housing even under the most lenient payment schemes[18]. Hence, there has long been state involvement in home building. With unaffordable home prices, shanties have mushroomed[19]. Other avenues for finance for home purchases commonly include participation in cooperatives, where monthly payments made also determine the size of the length of time for construction.

Expenditures on ownership of dwellings accounted for 4.6% of GNP in 2005 according to the Turkish Statistical Institute. These expenditures have hovered between 4.5% and 7% of GNP since 1987[20]. An examination of the annual percentage change of the same series for the same period shows that this too has largely been range bound, growing in most years at an

---

[13] The Turkish economy had been contracting in the first half of 1999 in the wake of the contagion-effects of the August 1998 Russian devaluation and moratorium. Capital outflow leading to rising interest rates and a sharp decline in the important Russian export market were largely to blame.

[14] Treasury borrowing instruments are separated into cash versus non-cash sales (for instance, bonds issued to loss-making state banks). Average sovereign domestic borrowing maturity comprising cash and non-cash components stood at 20.9 months as of April 2005. Bonds with the longest maturity thus far - issued for domestic borrowing - are for six years, but represent a minor portion of the domestic borrowing stock. If one looks at just the cash component, the average life of bonds issued domestically is a mere 14.1 months.

[15] Refer also to Gökkent et al (2005). As of May 27th, 2005, average maturity of deposits stood at 89 days. Foreign currency deposits comprised 40.4% of total deposits. Thus, banks would wish to place these deposits as foreign currency loans in order to minimize exposure to currency risk, hence the spread of FX-indexed loans.

[16] Turkstat (2004) reports, for instance, that the population of Istanbul rose by 4% in the period between 1995 and 2000 due to net migration to the city. In 1990, 51.3% of the population lived in cities. By 2000, this had risen to 59.3%.

[17] Population growth slowed from 19.7 per thousand in 1990 to 15.3 per thousand by 2003, according to Turkstat.

[18] See Dedes et al (2002).

[19] Turkish shanties are usually one or two storey, brick, and self-built structures. These are generally built on Treasury owned land and, of course, residents do not own land deeds. Frequent amnesties close to election times have legitimized some of these, however, through deed awards.

[20] We also examined the same ratio for the US since 1947 and found comparable figures. The motivation was, in part, fuelled by the knowledge that food expenditures, for instance, as a percentage of national income is smaller in developed countries. It would thus be valid to question whether a similar pattern may exist with regards to "shelter", but this does not seem to be the case.

annual rate of between 1% to 3% regardless of the ups and downs of the economy[21]. This is not to say that spending on dwellings was not affected, say in the 1994 crisis, but that impact was limited, with dwelling spending still growing albeit at a slower rate as illustrated in figure 1 in the appendix. An important exception occurs in the period immediately following the 1999 earthquake. The series actually registers negative growth, dipping at roughly -1% year-on-year at the start of 2000.

Nominal house prices did decline[22] sharply in the aftermath of the 1999 earthquake in the Marmara region of Turkey. This decline persisted as seismic studies suggested that the next fault line to break would be closer to more densely populated areas, again in the Marmara region[23]. Thus, home prices fell drastically in zones that were considered to be less safe, such as in districts built in valleys, on old river beds, or in regions where the ground was not rocky[24]. At the same time, higher demand for real estate on more solidly grounded areas caused prices to rise in those districts.

---

[21] Tsatsaronis & Zhu (2004) report average growth of real home prices to be between 1.5% and 2.4% per annum for their sample of 17 industrialized countries since 1970.
[22] No doubt with this effect being mostly confined to regions closest to earthquake hit areas.
[23]Turkey as a whole is active seismically, but major quakes around Istanbul are recorded once in a century or so. Predictions about the threat of an inevitable break to come in the tectonic plate under Marmara Sea put some pressure on house prices in areas that are most vulnerable, but these concerns have dimmed with the passage of time.
[24] State response to the earthquake has been institution of more stringent inspections and imposition of a requirement for the purchase of home insurance.

Meanwhile, nominal rents did not decline because of the widespread use of annual contracts[25]. They merely stalled, temporarily flattening, but quickly bouncing back with the imposition of an exchange rate based stabilization (ERBS) scheme. Then, unravelling of this plan caused a more prolonged stagnation of rent and house prices[26]. Kuzeybatı (2004) states that rates in the Istanbul region fell by about 30% in US$ terms and vacancies rose after the failure of the ERBS plan in February 2001. Anecdotal evidence also suggests that the industrial property market was the worst affected amongst different real estate categories, with rents reportedly declining by 40%, again in US$ terms. A recovery began after the November 2002 general elections by which time the economic climate had somewhat improved.

By 2005, the annual consumer price inflation fell to 8% per annum and nominal TL interest rates fell in tandem as illustrated in figure 2 of the appendix. Lower rates triggered loan demand, as clearly evident from figure 3, and home prices shot up. More recently, the tenor of real estate loans provided by private sector banks has risen to twelve to fifteen years, helped by a semblance of macroeconomic stability after 2001. Borrowers may choose between TL and FX indexed loans.

Indeed, the greater affordability of credit has contributed towards the formation of a possible real estate price bubble. However, in the past, the almost prohibitively expensive cost of home loans had

---

[25] Both rents and home prices fell in real terms.
[26] As the Turkish currency slid by roughly 50% through mid-2001, equity markets reacted by rising sharply in the same period -led by export-oriented firms-, admittedly from a low base, but mostly due to the recognition that these assets were, in a sense, inflation- proof, a conclusion that is also applicable to real estate.

significantly affected the level of impact home finance should have had. As such, empirical results – based on several years of data spanning volatile economic conditions – do not display a prominent role for interest rates in the determination of home prices.

Model

We use a natural generalisation of autoregressive models popularised by Sims (1980), known as a systems regression model, i.e. there is more than one dependent variable. The simplest case is a bi-variate vector auto-regression model (VAR) as follows:

$$y_{1t} = b_{10} + b_{11}\, y_{1t-1} + .. + b_{1k}\, y_{1t-1} + a_{11}\, y_{2t-1} + .. + a_{11}\, y_{2t-1} + u_{1t}$$

$$y_{2t} = b_{20} + b_{21}\, y_{2\ t-1} + .. + b_{2k}\, y_{2t-1} + a_{21}\, y_{1t-1} + .. + a_{11}\, y_{1t-1} + u_{2t}$$

where u_{it} is an iid disturbance with $E(u_{it})=0$, $i=1,2$; $E(u_{1t}\, u_{2t})=0$.

The analysis could be extended to a VAR (p) model, or so that there are p variables and p equations[27].

A vector auto-regression model was employed in order to examine real estate markets in Turkey.

Despite the absence of a series on median home prices, series for cost value of homes and floor area in square meters are available in construction statistics according to occupancy permits published by the Turkish Statistical Institute. A series for cost value per square meter was obtained based on these data. This was used as a proxy for home prices[28]. Note that even though home prices do deviate from replacement values, cost values would still be affected by rising land costs, for instance. Other variables in the analysis were loans, rent, consumer prices, wages, interest rate, exchange rate, a dummy variable for the 1999 earthquake, and seasonal dummies. Rental rates may be thought of as a component of the yield of real estate assets. Thus, one would expect to observe a relatively steady relationship between rental rates and home prices[29].

---

[27] There are some advantages and disadvantages for this model:
Advantages of VAR Modelling
Do not need to specify which variables are endogenous or exogenous - all are endogenous; Allows the value of a variable to depend on more than just its own lags or combinations of white noise terms, so more general than ARMA modelling; Provided that there are no contemporaneous terms on the right hand side of the equations, can simply use OLS separately on each equation; Forecasts are often better than "traditional structural" models.
Disadvantages of VAR Modelling
VAR's are a-theoretical (as are ARMA models); How do you decide the appropriate lag length? So many parameters! If we have p equations for p variables and we have k lags of each of the variables in each equation, we have to estimate $(p+kp^2)$ parameters; Do we need to ensure all components of the VAR are stationary? How do we interpret the coefficients?

[28] Expenditure on ownership of dwellings found in national income data was also examined for use in the analysis of real estate markets. Per capita home expenditure data were obtained by dividing expenditure on ownership of dwellings by population. Since population data were available only as annual estimates, quarterly data were obtained by assuming that the population growth rate for the year would be evenly spread over the year. However, expenditure is price time's quantity, and thus may not be suitable for our analysis.

[29] Kranier (2003) states that the price to rental ratio in the US has been pretty steady. While also applicable to Turkey, there is likely to have been more volatility in the latter mainly due to sharp swings in the numerator of this ratio and keeping in mind that rent contracts may delay adjustment.

Residence rent series is a sub-category in the CPI index. We deflated this using CPI to obtain the relative movement of rental rates. Growth rate of rents appear to have fallen during the 1994 crisis, then exhibit a seesaw pattern until rising sharply at the end of 1998. The series then remain steady for some time, but fall sharply again during the 2001[30] crisis. The inclusion of consumer prices in our model is motivated by the finding in other studies that home ownership is generally regarded as an anti-inflationary hedge. Wage expenditures were used to capture income effects. Real, de-seasonalized data are quarterly from 1987 to the third quarter of 2005. The choice of these variables was in some measure dictated by data constraints[31].

Thus, an unrestricted VAR[32] model is

specified comprising salient indicative variables, shown below, in order to examine a shock's dynamic impact on home prices; sd1, sd2, sd3 are seasonal dummies included to take account of seasonality effects. Inclusion of a dummy variable d_1 intends to capture the effect of the 1999 earthquake and takes a value of one for the period 1999Q1 to 1999Q4 and zero thereafter. The Cholesky[33] method – in which the order of the variables is important – has been used in our analysis.

$\Delta price_t = a(L) \Delta price_{t-1} + b(L) \Delta Ind_{t-1} + d_1 + sd1 + sd2 + sd3 + \epsilon_{t-1}$

$\Delta Ind_t = a(L) \Delta Ind_{t-1} + b(L) \Delta price_{t-1} + d_1 + sd1 + sd2 + sd3 + \epsilon_{t-1}$ (1)

A two period lag[34] was deemed appropriate for our analysis on the basis of Granger Causality and Lag Selection Criteria results. In addition, the stability of the VAR model was tested using the AR root table 1.

Table 1: Roots of Characteristic Polynomial

---

[30] While currency devaluation took place in February of that year, a systemic banking crisis had already struck by November 2000.

[31] A variety of other variables were also examined which are not presented here including, for example, stock prices of real estate investment partnership (weighted according to trading volume and then deflated by CPI to obtain a weighted series in real terms) firms - akin to real estate investment trusts (REITs). The series shows a sharp response to the Russian crisis, but raises with the April 1999 election results, and then reaches record highs in the first few months of the ERBS scheme in 2000. These gains are lost just as quickly after peaking in the first quarter, a pattern also observed with the broader ISE-100 index as may be seen from figure 4 of the appendix. This figure plus several others examining the remaining variables may be obtained from the authors at msengun@khas.edu.tr

[32] $X_t = \mu_t + \sum_{i=1}^{P} A_i X_{t-i} + u_t$, where p-lag length for all variables, $X_t = (X_{1t}, X_{2t}, \ldots \ldots X_{mt})^T$ is vector of m

exogenous variables, $u_t \sim N(0; \sigma^2)$; μ_t consist of determined variables (such as constant, time trend, or dummy variables)

[33] For identification as traditionally Cholesky method is used. Given that the Cholesky decomposition restricts the B_0 matrix to be triangular; this means that there is no simultaneous interaction among the variables.

[34] An important issue when estimating the VAR is the appropriate lag length *p*. If the lag length is too large, the VAR is more likely to pick –up within sample random variation as well as any systematic relationship, because there is need to estimate great number of parameters. If there are *m* variables with lag length *p*, it is necessary to estimate *m(mp+1)* coefficients. Also it influences the power of rejecting hypothesis: if *p* is to large, degrees of freedom are wasted. If the lag length is too small, important lag dependences may be omitted from the VAR and if serial correlation is present the estimated coefficient will be inconsistent

Root	Modulus
-0.876963	0.876963
-0.052727 - 0.812860i	0.814569
-0.052727 + 0.812860i	0.814569
0.763827 - 0.092429i	0.769399
0.763827 + 0.092429i	0.769399
0.166379 - 0.738085i	0.756605
0.166379 + 0.738085i	0.756605
-0.680089 - 0.331556i	0.756605
-0.680089 + 0.331556i	0.756605
No root lies outside the unit circle. VAR satisfies the stability condition. Lag specification 2	

Source: Authors' estimates

According to the *inverse* roots of the characteristic AR polynomial result, the selected VAR model with 2 lags is stationary. The estimated VAR is stable (stationary) if all roots have modulus less than one and lie inside the unit circle. If the VAR is not stable, certain results (such as impulse response standard errors) are not valid[35].

Since VARs are linear systems, the matrix of coefficients is sufficient to determine the impact of any shock on all future values of the variables in the VAR. In other words, initial conditions do not matter. The traditional impulse response analysis is to trace out the yearly *changes* in the forecast values (stock and price) that result from a temporary 1-period shock to any variable in the system – ,or in this case, the exogenous variable that is outside of the system. In our analysis, in chart 1 initially a 100% shock occurs in home prices, the effect of which dissipates after the 6-7th period[36]. A shock in CPI, Wages, Loans, exchange rate elicits a significant response from home prices,

while a shock in rent, the earthquake dummy D1 and interest rate   elicits a smaller response and almost all dissipate after the 6th period.

Variance Decomposition of real estate price results provided in table 2 indicate that 16-15% of the variance in home prices (PRICE) is explained by consumer price index (CPI) movements, 15-37% by our relative rent price index (RENT), and 8-12% by wages (WAGE EXP), 6-4% by loans (LOANS), and 5-3% by interest rate (INTEREST), 3-2% exchange rate (EXCHANGERT), 3-2% by the earthquake dummy (D1).

---

[35] Refer to Lütkepohl (1991).
[36] This tendency is appropriate given macroeconomic conditions in Turkey.

Table 2 – Variance decomposition of home prices

Period	S.E.	PRICE	CPI	RENT	WAGE EXPENDITURE	LOANS	INTEREST	EXCHANGERT	D1
1	0.932323	100.0000	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	1.544353	59.21568	16.02718	15.40357	8.799569	6.560907	5.416957	3.235692	3.980236
5	1.872265	46.51681	15.96650	37.93890	12.08350	4.685302	4.251925	3.135690	3.976589
8	1.898829	45.79172	15.23440	37.90540	11.97644	4.075759	3.929709	2.235695	2.789456
9	1.921949	45.86257	15.12013	37.51107	11.11241	4.006665	3.715310	2.023578	2.659780
10	1.955936	45.67568	15.01235	37.16898	11.98665	4.161199	3.899000	2.123478	2.680023

Source: Authors' estimates

The importance of innovations in CPI in accounting for a relatively larger share of the variability in home prices is consistent with other studies, and is a reflection of the importance of macroeconomic stability. Thus, home ownership is regarded as an anti-inflationary hedge. The result for wage expenditures, again, supports the finding in other country studies that income change is not the most important variable that affects home prices. A boom in housing loans is a new phenomenon in Turkey which has contributed to recent home price movements, but because insufficient time has passed for it to fully reflects on the results of our model. Future studies, with the benefit of longer and more detailed series, may also investigate microeconomic factors that affect the real estate markets in Turkey as data availability becomes less of an issue.

Conclusions

A vector auto-regression model is employed in order to examine the factors – with emphasis on macroeconomic variables - that affect real estate markets in Turkey. A large number of variables were examined and some excluded. Others were found to have a relatively small impact, including exchange rates – not particularly surprising, given that housing is a non-traded good; in any case, its filtered effect on inflation was directly captured by the inclusion of a variable for consumer prices – and interest rates – again, not surprising given the lack of a longstanding mortgage market in Turkey because of macroeconomic instability. Changes in home cost values per square meter were used as a proxy for home price movements. Results indicate that 16-15 % of the variance in home prices (PRICE) is explained by consumer price index (CPI) movements, 15-37% by our relative rent price index (RENT), and 8-12% by wages (WAGE EXP), 6-4% by loans (LOANS), and 5-3% by interest rate (INTEREST), 3-2% exchange rate (EXCHANGERT), 3-2% by the earthquake dummy (D1). The importance of innovations in CPI in accounting for a relatively larger share of the variability in home prices is consistent with other country studies, and is a reflection of the importance of macroeconomic stability, or in other words, the importance of home ownership as an anti-inflationary hedge. The result for wage expenditures indicates that income change is not crucial in determining home prices. Recent developments in the housing loan market suggest that a loan boom since late 2004 may have contributed to raising housing prices sharply, but the relatively few observations in our data set depicting this phenomenon fail to translate into significant results in a VAR model. In the past, microeconomic data availability has been an issue in the analysis of real estate markets in Turkey, but future studies are likely to benefit from improved data coverage/availability and can build on the macroeconomic analysis provided in this paper.

References

Bernanke, B., "Asset-Price `Bubbles` and Monetary Policy", speech delivered at the National Association for Business Economics, October 15, 2002.

BIS, "Turbulence in Asset Markets: The Role of Micro policies", Contact Group on Asset prices, September 2002.

Capozza, D., P. Hendershott, C. Mack & C. Mayer, "Determinants of Real House Price Dynamics" *NBER working paper series*, WP 9262, October 2002.

Cho, M., "House Price Dynamics: A Survey of Theoretical & Empirical Issues", *Journal of Housing Research*, v.7, #2:145-172, Fannie Mae Foundation, 1996.

Collyns, C. & A. Senhadji, "Lending Booms, Real Estate Bubbles and The Asian Crisis", *IMF Working Paper* #20, January 2002.

Dedes, C., A. Őzkan, P. Tűrker-Devecigil & T. Yılmaz, *"Tűrkiye'de Gelir Gruplarına Göre Konut Ődenebilirliği"*, Housing Secretariat, December 2002.

Galal, A. & O. Razzaz, "Reforming Land and Real estate Markets", *World Bank Policy Research Working Paper* # 2616, June 2001.

Gökkent, G., M. Sengun Ucal & B. Veeramacheneni, "Credit, Deposit Interest Spreads in Turkey", Proceedings of the 2005 Academy of International Business Northeast Annual Conference, p.377, October 6-8, 2005.

Helbling, T. & M. Terrones, "When Bubbles Burst", in *World Economic Outlook*, Chapter 2, IMF, April 2003.

Hilbers, P., Q. Lei, and L. Zacho, "Real estate Market Developments and Financial Sector Soundness", *IMF Working Paper* # 129, September 2001.

IMF, "Macroprudential Analysis: Selected Aspects Background Paper", June 2000.

Kalra, S., D. Mihaljek, & C. Duenwald, "Property Prices and Speculative Bubbles: Evidence from Hong Kong SAR", *IMF Working Paper* #2, January 2000.

Krainer, J., "House Price Bubbles", *FRBSF Economic Letter*, #20003-06, March 7, 2003.

Kuzeybatı Real Estate Services, *"Commercial Property Market in Greater Istanbul"*, April 2004.

Lütkepohl, H., "Introduction to Multiple Time Series Analysis", Springer-Verlag, 1991.

Sims, C. A. "Macroeconomics and Reality", *Econometrica*, 48 (10), 1980, pp.1-48.

Tsatsaronis, K. & H. Zhu, "What Drives Housing Price Dynamics: Cross-country Evidence", *BIS Quarterly Review*, 65-778, March 2004.

Turkstat, "Year 2000 Census Migration Statistics", December 2004.

*Dr. Meltem S. Ucal is based at the Faculty of Economics & Administrative Sciences, Department of Economics, Kadir Has University, Istanbul, Turkey. She received her BA, MA and PhD, all in Econometrics, from Istanbul University. She has published many articles in international and domestic journal such as Journal of Social Science**,** and several others. Her current research interests/publications are model selection, nonparametric regression, bootstrap, cross-validation, FDI, income inequality, and housing markets.

**Dr. Gıyas Gőkkent is based at the College of Business Administration, Abu Dhabi University and Head of Research, National Bank of Abu Dhabi, Abu Dhabi, U.A.E. He received a BA in Economics from University of Florida in 1991. He also received an MA and PhD in Economics from Florida International University. Dr Gőkkent has published many articles in international and domestic journals such as Eastern European Economics, Economia Internazionale, and several others. His recent interests are macroeconomics analysis and financial markets.

♣ *The views expressed here are personal to the authors and do not necessarily reflect those of the other staff, faculty or students of this or any other institution.*

****

Book Review:

Jeffrey Sachs. *Common Wealth: Economics for a Crowded Planet.* Published by Penguin Books. New York. PP 400. 1-59420-127-7.

The statement "Jeffrey Sachs never disappoints" has perhaps become too common place, but it has never been truer when it comes to qualifying his most recent work *Common Wealth: Economics for a Crowded Planet*. Sachs paints a vision of a united humankind staring into a window of opportunity when crucial decisions need to be made in order to assure our survival. Using sound calculations and showing the applications of already available technologies, he provides us with concrete solutions for some of the most distressing situations the world is now facing. Sachs covers an array of different disciplines to explain, in the simplest terms, his framework of action to tackle climate change, stabilise population growth, manage scarce resources, contribute to the development of the world's poorest regions and achieve global co-operation.

The first part of the book opens with a decisive feeling that a new era is dawning upon us. Sachs describes six global trends that define this era: humanity's increased accumulation of wealth, population growth, shift of the economic gravity centre to Asia, more people living in urban centres, global environmental crisis and rising inequalities. The first trend can give rise to what Sachs terms the era of convergence, as the poorer economies grow at faster rates than the richer ones, thus narrowing the income gap. However, he argues that there are several nations who are left out of this convergence process, particularly those in sub-Saharan

Africa. Moreover, he warns how our unbridled population growth and increased economic activity is on an unsustainable path, which will have a catastrophic effect on the environment.

The second part of the book comprehensively examines the current environmental crises, from the causes to the possible solutions. Sachs uses the term Anthropocene, coined by the Nobel laureate Paul Crutzen, to show how humans have appropriated the Earth's resources for their own benefit, leading to major environmental transformations. He shows how, in some cases, these human impacts have had disastrous effects on the delicate balance of nature. After identifying three areas of environmental concern which are climate change, water management and biodiversity conservation, Sachs offers solutions to these issues with already available technologies such as carbon capture and sequestration, hybrid automobiles, drip irrigation in agriculture, nitrogen cycle management, among others.

However, Sachs argues these technologies need to be scaled up to a magnitude where they can effectively avert the various environmental crises on a global scale. For this, he emphasis that there must be some investments made, which are rather small compared to the costs of inaction. Additionally, Sachs there needs to be certain governmental regulations in place to avoid practices that are detrimental to the natural world. All throughout, Sachs uses carefully researched scientific facts to expose the issues and sound accounting and engineering to devise the solutions.

The third part of the book focuses on the issue of population growth. Sachs explains how the uncontrolled demographic increases may strain the Earth's resources to a point where technology cannot help to recover them. Hence, it is necessary to stabilise the global population at eight billion people. This will be possible, he argues, if by 2050

the total fertility rate of the world's population is around two and there is a very low child mortality; this means that, on average, each woman will replace herself with one daughter, therefore stabilising the population. The achievement of a total fertility rate of two should be voluntary, but governments may influence this choice.

For Sachs, the most important factor in reducing the fertility rate is to improve child survival, as households will choose to have fewer children if they know that their chances of survival are very high. Other factors he mentions are the education and empowerment of women, the access to reproductive health services, legal abortion, government provided old-age security, among others. Again, Sachs emphasises that these actions need public leadership and financing from the donor countries.

The fourth part of the book deals with Sachs' specialty, which is economic development. This section seems like the culmination of the ideas that were first outlined in his best-seller *The End of Poverty*. Dropping the apologetic tone of his previous work, this time he offers more concrete solutions and a clearer framework. He refers back to his own concept of clinical economics to show how there is no "one-size-fits-all" strategy for economic development. Nonetheless, he argues that there are certain key factors that must be considered to help regions like sub-Saharan Africa to break from the poverty trap. According to Sachs, there needs to be a boost to agricultural productivity (a much needed African Green Revolution), an improvement in the provision of health services and education and the building of infrastructure, all within a framework of sustainability and environmental consideration.

Sachs explains that once the population breaks from the poverty trap and is able to provide tax revenue for the state, this last should provide a sound business

environment, social insurance, funding of scientific research, among others, to help move the economy upwards in the development ladder. Yet, for the economy to climb the first rung of the ladder, there needs to be some financing from donor countries. Sachs shows how rich countries that help their own poor the most, by having a comprehensive welfare state, are the same ones that have the highest percentage of the national income devoted to official development assistance. Through this, he counters the common claim that helping the poor in other countries would require a diversion of the funds used to help the poor at home.

The last part of the book is perhaps the most essential as it faces the challenge of global co-operation needed to achieve all the aforementioned strategies. Indeed, a recurring criticism of Sachs' ideas is his lack of arguments to persuade the rich nations to help the poor nations, as well as his avoidance to provide concrete figures for the cost of this help. In *Common Wealth,* Sachs computes a grand total for the achievement of his plan of action, which would be equal to 2.4 per cent of the gross national product of rich economies (at the time of his writing). He shows how it is in the clear benefit of countries such as the United States to engage in the financing of such plans; if foreign policy is oriented towards economic development and environmental conservation, there will be an avoidance of the desperate and volatile societies that constitute the breeding ground for terrorism and civil strife.

Disregarding the scepticism with which his ideas are often met, Sachs makes use of the facts to prove that global co-operation is something that has already happened successfully in campaigns such as the eradication of smallpox or India's Green Revolution. In the final chapter, he makes a powerful invitation to each individual to be a part in this effort of facing the global challenges and shifting to a much more

sustainable path. This is one invitation that is not based on unrealistic ideals, but on well-researched information and pragmatic solutions, and it is one invitation that we should pay heed to.

Ana Carolina Correa

The BNE is celebrating the electronic age by disbanding its print copy distribution list. This process began some time ago but is reaching its final stages now. All former print-copy readers are invited to join the electronic mailing alert service by contacting the editor at dabirp@richmond.ac.uk

ABOUT The Briefing Notes in Economics:

The current series of the **Briefing Notes in Economics** has been published regularly since November 1992. The series continues to publish quality peer-reviewed papers. As with recent issues, some of those that are forthcoming will include conference listings and other information for anyone with an interest in economics. Issue No. 80 witnessed the BNE's transformation into a bi-annual publication appearing in March/April and again in September/October.

As always information on joining the mailing list, submitting a paper for publication consideration and much else besides, appears on the web-site. Should you need more information on any of the above matters please write to **Dr. Parviz Dabir-Alai,** Editor – Briefing Notes in Economics, Department of Business & Economics, Richmond – The American International University in London, Queens Road, Richmond, Surrey TW10 6JP, UK. Fax: 44-20-8332 3050. Alternatively, please send your e-mail to him at: dabirp@richmond.ac.uk

The Book Review Editor is Dr Eva Tsahuridu and she may be reached at eva.tsahuridu@rmit.edu.au

Briefing Notes in Economics

* Call for Papers *

http://www.richmond.ac.uk/bne/

The BNE is always keen to hear from prospective authors willing to write a short, self-contained, and preferably applied, piece for publication as a future issue. The series prides itself on giving the well-motivated author a rapid decision on his submission. The **Briefing Notes in Economics** attracts high quality contributions from authors around the world. This widely circulated research bulletin assures its authors a broad-based and influential readership. The **Briefing Notes in Economics** is indexed with the *Journal of Economic Literature.*

For further information please visit the BNE website at the following address: www.richmond.ac.uk/bne/

Previous authors have included:

Mak Arvin (Trent), Mark Baimbridge (Bradford), Alexandre Barros (Oxford), Amitrajeet Batabyal (Utah), William Boyes (Arizona State), Frank Chaloupka (Illinois), E. Ray Canterbery (Florida), Roger Clarke (Cardiff), William DiPietro (Daemon), Jean Drèze (LSE, Delhi), James Gapinski (Florida), Andrew Henley (Swansea), Greg Hill (City of Seattle), Prabhat Jha (World Bank), Geeta Gandhi Kingdon (Oxford), Carmen Li (Essex), Robert Jones (Skidmore), Mehmet Odekon (Skidmore), Ramkishen Rajan (George Mason), Hans Singer (Sussex), Simon Ville (Wollongong), Bob Wearing (Essex), Nobuyoshi Yamori (Nagoya) and many others.