Curriculum Vitae Marc K. Francke

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Professor Real Estate Valuation
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Personal Details

Date of birth	March 8, 1970
Nationality	Dutch
Marital status	Married

Education

1994 – 2006	PhD in Econometrics, obtained from the VU University Amsterdam on March 7, 2006. PhD thesis: *Marginal Likelihood in State-Space models; theory and applications* (advisors: S.J. Koopman and A.F. de Vos)
1988 – 1994	MSc in Econometrics, VU University Amsterdam

Academic Career

2017 –	Research Fellow at MIT Center for Real Estate's Price Dynamics Platform
2009 –	Professor Real Estate Valuation, Amsterdam Business School, Finance Group, University of Amsterdam
2006 – 2008	Assistant professor of Econometrics, VU University Amsterdam

Research Interests

Real Estate:	Valuation; Price Index Construction; Mass Appraisal; Housing Markets; Commercial Real Estate; Fintech
Econometrics:	Time Series; State space models; Kalman filter; Unit roots and cointegration; Machine learning

BUSINESS CAREER

2009 –	Head of Real Estate Research at Ortec Finance Research Center
2001 – 2008	Co-founder and general manager of OrtaX, a firm specialized in mass appraisal of real estate by the use of statistical models. The models are used by local governments for property tax and housing corporations for measuring the indirect returns.
1994 – 2000	Amsterdam Council Tax office (Dienst Belastingen Gemeente Amsterdam) Development and implementation of real estate mass appraisal models.

TEACHING EXPERIENCE

2008 –	Lectures in the courses - Advanced Real Estate Valuation - Real Estate Valuation and Investment - Real Estate Markets - Real Estate Investment - Real Estate Finance and Portfolio Management University of Amsterdam
2006 – 2008	Undergraduate courses in Quantitative Methods and Statistics (Seminars), VU University Amsterdam
2001 – Now	Lectures in the courses – Big data, machine learning and artificial intelligence – Real Estate Valuation – Market Analysis Amsterdam School of Real Estate

PUBLICATIONS

Publications in Journals

Leib, M., Köbis N., Francke, M.K., Shalvi S. and Roskes, M. (2019), Precision in a Seller's Market: Round Asking Prices Lead to Higher Counteroffers and Selling Prices, Forthcoming in *Management Science*.

Van der Vlist, A., Francke, M.K. and Schoenmaker, D. (2019), Agglomeration Economies and Capitalization Rates: Evidence from the Dutch Real Estate Office Market, Forthcoming in *The Journal of Real Estate Finance and Economics*.

Van de Minne, A.M., Francke, M.K., Geltner, D.M. and White, R. (2019), Using Revisions as a Measure of Price Index Quality in Repeat-Sales Models, Forthcoming in *The Journal of Real Estate Finance and Economics*.

Van Dijk, D.W. & Francke, M.K. (2018). Internet search behavior, liquidity, and prices in the housing market, *Real Estate Economics*, 46(2), 368-403.

Dröes, M.I. and Francke, M.K. (2018), What Causes the Positive Price-Turnover Correlation in European Housing Markets?, *The Journal of Real Estate Finance and Economics*, 57(4), 618-646.

Francke, M.K. and van de Minne, A.M. (2017), The Hierarchical Repeat Sales Model for Granular Commercial Real Estate and Residential Price Indices, *The Journal of Real Estate Finance and Economics*, 55(4), 511 – 532.

Francke, M.K. and van de Minne, A.M. (2017). Land, Structure and Depreciation, *Real Estate Economics*, 45(2), 415 – 451.

van Bragt, D., Francke, M.K., Singor, S.N. and Pelsser A. (2015). Risk-neutral valuation of real estate derivatives. *Journal of Derivatives*, 23 (1), 89-110.

Francke, M.K. and Schilder, F.P.W. (2014). Losses on Dutch residential mortgage insurances. *Journal of European Real Estate Research*,7(3), 307-326.

Constantinescu, M. and Francke, M.K. (2013). The Historical Development of the Swiss rental market- A new Price Index, *Journal of Housing Economics*, 22, 135 – 145.

De Wit, E.R., Englund, P. and Francke, M.K. (2013). Price and Transaction Volume in the Dutch Housing Market, *Regional Science and Urban Economics*, 43, 220 – 241.

Francke, M.K. (2010). Repeat Sales Index for Thin Markets. A Structural Time Series Approach, *The Journal of Real Estate Finance and Economics*, 41(1), 24 - 52.

Francke, M.K., Koopman, S.J. and de Vos, A.F. (2010). Likelihood functions for state space models with diffuse initial conditions. *Journal of Time Series Analysis,* 31 (6), 407 - 414.

Francke, M.K. and de Vos, A.F. (2007). Marginal Likelihood and Unit Roots. *Journal of Econometrics*, 137(2), 708 - 728.

Francke, M.K. and de Vos, G.A. (2004). The Hierarchical Trend Model for Property Valuation and Local Price Indices. *The Journal of Real Estate Finance and Economics*, 28 (2), 179 - 208.

Francke, M.K. and de Vos, A.F. (2000). Efficient Computation of Hierarchical Trends. *Journal of Business and Economic Statistics*, 18 (1), 51 - 57.

Francke, M.K. , Needham, D.B. and Bosma, P. (1997/1998). How the City of Amsterdam is using Econometric Modelling to Value Real Estate. *Journal of Property Tax Assessment & Administration*, 3, 25 - 46.

Academic publications in other Dutch Journals

Francke, M.K. en M. van der Schans (2019), Kopers in Amsterdam houden beperkt rekening met erfpachtbetalingen, *Economisch Statistische Berichten*, 104 (4780), 592 – 594.

Beimer, J. en M.K. Francke (2019), Out-of-Sample House Price Prediction by Hedonic Price Models and Machine Learning Algorithms, *Real Estate Research Quarterly*, 18(2), 13 – 20.

Schaaf, M., J. Groenewegen en M.K. Francke (2018), Mediaberichtgeving is een voorlopende indicator voor de huizenmarkt, *Economisch Statistische Berichten*, 103 (4767), 495 – 497.

Francke, M.K., F. Schilder, P. de Vries, en J. Conijn (2018), Effecten mogelijke rentestijging in de koopsector, *ASRE research paper*, 2018-01.

Francke, M.K., F. Harleman, and W. Kosterman (2017), Determinanten en dynamiek van de huren in de vrije sector, *Economisch Statistische Berichten*, 102(4752), 377 – 379.

Van Dijk, D., M.K. Francke en M. Mastrogiacomo (2017), Beperking hypotheekrisico zichtbaar met loan level data, *Economisch Statistische Berichten*, 102(4749S), 27 – 31.

Droës, M.I. and M.K. Francke (2017), De relatie tussen prijzen en transactievolumes in Europese woningmarkten, *Real Estate Research Quarterly*, 16(2), 18 – 26.

van der Windt, N., Francke, M.K., de Vries , P and van Dalen, P. (2015). Woningprijzen koppelen zich regelmatig los van fundamenten: meer inzicht in de woningprijs-dynamiek. *Real Estate Research Quarterly*, 14 (2), 4-11.

Francke, M.K., van de Minne, A.M. and Verbruggen, J.P. (2015). De sterke gevoeligheid van woningprijzen voor kredietvoorwaarden. *Economisch-Statistische Berichten*, 100 (4713 & 4714), 426-429.

Francke, M.K., van Gool, P. and van de Minne, A.M. (2014). Prijsindex voor commercieel vastgoed. Real Estate Research Quarterly, 13(4), 47 - 57.

Francke, M.K. and Schilder, F. (2013). Schade en schuld op de hypotheekmarkt. *Economisch-Statistische Berichten*, 98 (4668), 558-560.

van de Minne, A. and Francke, M.K. (2013), Prijsontwikkelingen starterswoningen. Starters slaan hun slag, *Real Estate Research Quartely*, 12(4), 33 - 39.

Van de Minne, A. and Francke, M.K. (2012), De waardebepaling van grond en opstal, *Real Estate Research Quartely*, 11(3), 14 - 23.

Francke, M.K. (2010). How Bloated is the Dutch Housing Market? *Real Estate Research Quarterly*, 9 (1), 48-54.

Francke, M.K. (2010). A State-Space Model for Residential Real Estate Valuation. *Aenorm*, 18 (July), 4-7.

Francke, M.K., Kuijl, T. and Kramer, B. (2009). De betrouwbaarheid van Nederlandse huizenprijsindices. *Real Estate Research Quarterly*, 8(3), 5 - 11.

Kramer, B., Kuijl, T. and Francke, M.K. (2009). Invloed woningprijsfluctuaties. *Real Estate Research Quarterly*, 8(3), 12 - 19.

Francke, M.K. (2005). Taxeren van courant onroerend goed zonder referentieverkopen. *Property Research Quarterly*, 5, 28–35.

Publications in Volumes and Proceedings

Francke, M.K. (2008). The Hierarchical Trend Model, In T. Kauko and M. Damato (eds), *Mass Appraisal Methods; An International Perspective for Property Valuers,* 164 - 180, Wiley-Blackwell RICS Research, 2008.

Boelen, B., Francke, M.K. en van de Paverd, F. (1997). Modelmatige bepaling van grondwaarde. In N.C. Harkes (eds), *Trends in de berekening van grondkosten*, 35 - 54, Delftse Universitaire Press.

Francke, M.K. (1996). De waarde van omgevingskenmerken, In L.B. Uittenbogaard en G. A. Vos (eds), *Waardebepaling Vastgoed. Enkele actuele ontwikkelingen*, 74 - 88, Stichting voor Beleggings- en Vastgoedkunde (Amsterdam School of Real Estate).

Professional publications

Francke, M.K. en M. van der Schans, Erfpachtcorrectie van verkoopcijfers in Amsterdam in het kader van de Wet WOZ, 2019, Ortec Finance.

Francke, M.K., E. Hennink, I. de Heus and P. Tuijp (2018), Understanding Real Estate Illiquidity Premiums Better, INREV research paper.

Francke, M.K. (2017), In: Commercial Property Price Indicators: Sources methods, and issues, Eurostat.

Francke, M.K. and Broekmeulen, B. (2016), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 2^{e} kwartaal 2016, Ortec Finance, 3 augustus 2016.

Francke, M.K. and Broekmeulen, B. (2016), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 3^{e} kwartaal 2015, Ortec Finance, 29 maart 2016.

Francke, M.K. (2016), Voorspelling van de ontwikkeling op de woningmarkt rond het Groningenveld, Ortec Finance, 29 maart 2016.

Francke, M.K. and Lee, K.M. (2015), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 4^{e} kwartaal 2014, Ortec Finance, 21 mei 2015.

Francke, M.K. and Lee, K.M. (2014), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 3e kwartaal 2014, Ortec Finance, 16 december 2014.

Francke, M.K. and Lee, K.M. (2014), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 1e en 2e kwartaal 2014, Ortec Finance, 8 oktober 2014.

Francke, M.K. and Lee, K.M. (2014), De invloed van fysieke schade op verkopen van woningen rond het Groningenveld, Ortec Finance, 6 oktober 2014.

Francke, M.K. and Lee, K.M. (2014), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 4e kwartaal 2013, Ortec Finance, 24 april 2014.

Francke, M.K. and Lee, K.M. (2014), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 3e kwartaal 2013, Ortec Finance, 15 januari 2014.

Francke, M.K. and Lee, K.M. (2013), De ontwikkelingen op de woningmarkt rond het Groningenveld: actualisatie 2e kwartaal 2013, Ortec Finance, 23 oktober 2013.

Francke, M.K. and Lee, K.M. (2013), De waardeontwikkeling op de woningmarkt in aardbevingsgevoelige gebieden rond het Groningenveld, Ortec Finance, 12 augustus 2013.

Van de Minne, A., Francke, M.K. and Conijn. J. (2012), Gevolgen verkopen corporatiewoningen op woningprijzen, Ortec Finance.

Francke, M.K. (2011). Kwaliteitsbeoordeling van een model en de kenmerken, Syllabus VastgoedCert: hercertificering 2012: modelmatige waardebepaling, 7 – 32.

Francke, M.K. (2011). Waarderingsmodellen voor de vergelijkingsmethode, Syllabus VastgoedCert: hercertificering 2012: modelmatige waardebepaling, 33 – 51.

Francke, M.K. (2010). Modelmatige bepaling van de waarde in het economische verkeer. In P.J.M. de Graaff – Saarloos en I. Vermeulen (eds), *WOZ-taxatie*, 187 – 198, Doetinchem: Reed Elsevier.

Francke, M.K. (2010). Krimp en woningprijzen. De invloed van demografische krimp op de woningprijs, SEV, Rotterdam.

Francke, M.K. (2008). Modelmatige waardebepaling. In P.J.J.M. van den Bosch en J.M. Monsma (eds), *WOZ-praktijk pakket,* Reed Business Information.

Francke, M.K. en Saarloos, P.J.M. (2008). Onderbouwing taxatie, In P.J.J.M. van den Bosch en J.M. Monsma (eds), *WOZ-praktijk pakket,* Reed Business Information.

Francke, M.K. (2008). Modelmatige bepaling van de waarde in het economisch verkeer. In P.J.M. Saarloos en I. Vermeulen (eds), *Zakboekje WOZ-taxaties*, 192 - 199*,* Reed Business Information.

Francke, M.K. (2003). Geautomatiseerde waardebepaling, In P.J.J.M. van den Bosch en J.A. Monsma, *Praktijkhandboek WOZ*, Reed Business Information.

Monographs (English)

Francke, M.K. (2010). *Casametrics. The art of modelling and forecasting the market value of houses*. Amsterdam (extensive summary of inaugural speech).

Francke, M.K. (2006). *Marginal Likelihood in State-space Models. Theory and Applications*, Thesis,VU University Amsterdam.

Monographs (Dutch)

Francke, M.K. (2010), Casametrie. De kunst van het modelleren en het voorspellen van de marktwaarde van woningen, Vossiuspers UvA, Amsterdam (oratie).

Working- and discussion papers

Van Dijk, D.W. and Francke, M.K. (2019), Integration of Funding and Market Liquidity in Real Estate: International Evidence.

Francke, M.K. and A.M. van der Minne (2019), Daily Pricing of Commercial Real Estate.

Wang, Y., Francke, M.K. and Dröes, M.I. (2018), The Impact of the Time to Close on Residential Transaction Prices.

Korevaar, M. and Francke, M.K. (2018), When Birth or Death Hits Home: Demography, Growth and the Housing Market in Paris and Amsterdam, 1400-present.

Francke, M.K. and A.M. van de Minne (2018), Dealing with Unobserved Heterogeneity in Hedonic Price Models.

Francke, M.K., D.M. Geltner, and A.M. van de Minne (2017), An Application of a Dynamic Factor Model on US Commercial Property Price Indices, Research grant from Real Estate Research Institute.

Francke, M.K. (2017), The Role of the Holding Period Distribution in Repeat Sales Models.

Francke, M.K. (2016), Efficient estimation of state-space models with large and unbalanced observation vectors.

Francke, M.K., Harleman, F. and Kosterman, W. (2016), Huurprijzen NVM. Onderzoek naar prijsbepalende factoren, Ortec Finance Applied Working paper No. 2016-02.

van Dijk, D. and M.K. Francke (2015), Internet search behavior, liquidity and prices in the housing market, DNB working paper 481, De Nederlandsche Bank.

Francke, M.K., A. van de Minne and J. Verbruggen (2014). The effect of credit conditions on the Dutch housing market, DNB Working Paper, No. 447 / November 2014.

Francke, M.K. , Schilder, F., Teuben, B., Conijn, J. and Buffing, S.(2014), Markthuren, Applied Working paper No. 2014-4, Ortec Finance.

Francke, M.K. and van de Minne, A.M. (2011), The effects of demographic changes and supply constraints on Dutch housing prices, Research paper, University of Amsterdam.

Francke, M.K. (2010). Comparing Markets Rents from a User Cost and Reaction model. Applied Working paper 2010-03. Ortec Finance Research Center.

De Wit, E., Englund, P. and Francke, M.K. (2010). Price and Transaction Volume in the Dutch Housing Market. Tinbergen Institute Discussion Papers 2010-039/2 (Paper presented at ERES conference Stockholm, 2009)

Van Bragt. D., Francke, M.K., Kramer B. and Pelsser A. (2009). Risk Neutral Valuation of Real Estate Derivatives. Technical Working paper 2009-02. Ortec Finance Research Center.

Francke, M.K., Vujic, S. and Vos, G.A. (2009). Evaluation of the House Price Models Using an ECM Approach: The Case of the Netherlands, Methodological Working paper 2009-05. Ortec Finance Research Center (paper presented at the ERES conference, Stockholm, 2009).

Francke, M.K., Kuijl, T. and Kramer, B. (2009). A Comparative Analysis of Dutch House Price Indices. Applied Working paper 2009-02. Ortec Finance Research Center (paper presented at ERES conference, Stockholm, 2009).

Kramer, B., Kuijl, T. and Francke, M.K. (2009). The Impact of House Price Index Specification Levels on the Risk Profile of Housing Corporations. Applied Working paper 2009-03. Ortec Finance Research Center (paper presented at ERES conference, Stockholm, 2009).

Francke, M.K., de Vos, A.F. and Koopman, S.J. (2008). Likelihood Functions for State Space Models with Diffuse Initial Conditions. Tinbergen Institute Discussion Papers 2008-040/4.

Francke, M.K., de Vos, A.F. (2008). Bayesian Unit Root Tests and Marginal Likelihood. Technical paper, http://www.abs.uva.nl/pp/MKFrancke/.

Francke, M.K., de Vos, A.F. (2008). An Efficiency Correction Model. Technical paper, http://www.abs.uva.nl/pp/MKFrancke/.

Francke, M.K., de Vos, A.F. (2007). Marginal Likelihood based Tests on Cointegration in the Engle-Granger Model. Technical paper, http://www.abs.uva.nl/pp/MKFrancke/ (paper presented at ESEM conference, Budapest, 2007).

Seminar and conference presentations (from 2017)

Daily Market-to-Market Commercial Property Price Indicators
Conferences: AsRES Conference, Shenzhen, July 7 – 10, 2019.

Precision in Context Theory: When Buyers Counter Above the Asking Price, Precise Prices Are Suboptimal
Conferences: AsRES Conference, Shenzhen, July 7 – 10, 2019.

Dealing with Unobserved Heterogeneity in Hedonic Price Models
Conferences: Weimer School, West Palm Beach, May 18-19, 2018; International AREUEA conference, Guangzhou, June 12-15, 2018.
Seminars: Laval University, Quebec, October 1, 2018; Maastricht University, Advances in Real Estate Valuations – Machine Learning and Big Data, December 18, 2019.

When Birth or Death Hits Home: Demography, Growth and the Housing Market in Paris and Amsterdam, 1400-present
Conferences: International AREUEA conference, Milan, June 24 – 26, 2019 (by Matthijs Korevaar)
Seminars: University of Illinois, Chicago, September 27, 2018.

Integration of Funding and Market Liquidity in Real Estate: International Evidence
Conferences: Weimer School, West Palm Beach, May 17-18, 2019; International AREUEA conference, Milan, June 24 – 26, 2019; ReCapNet Conference, Mannheim, November 14–15, 2019 (by Dorinth van Dijk).

The Impact of the Time to Close on Residential Transaction Prices
Conferences: Weimer School, West Palm Beach, January 18-20, 2019; International AREUEA conference, Milan, June 24 – 26, 2019 (by Yumei Wang).

Transaction Based Indices for Commercial Real Estate Derivatives
Seminars: ERES Real Estate Derivatives industry seminar / CUREM, October 13, 2017, Zurich.

The Role of the Holding Period Distribution in Repeat Sales Models
Conferences: Real Estate Research Symposium, UNC-Chapel Hill, October 6, 2017; Weimer School, The Future of Real Estate, West Palm Beach, May 19, 20, 2017; Annual conference of European Real Estate Society, Reading, June 27-30, 2018; International Conference on Real Estate Statistics, Luxembourg, February 20 -22, 2019.
Seminars: Real Estate Index Seminar Amsterdam, Amsterdam, July 6, 2017; Real Estate Price Dynamics Platform MIT, August 23, 2017; Ortec Finance Research Meeting, Amsterdam, February 2, 2018.

The Illiquidity Premium of Non-listed Real Estate Investment Funds
Conferences: International AREUEA conference, Milan, June 24 – 26, 2019.

Understanding illiquidity premiums better
Seminars: Erwin Stouthamer Research Grant Seminar, INREV, February 15, 2018, Amsterdam.

The impact of ground leases on residential sale prices in Amsterdam
Conferences: National International Association of Assessing Officers Conference, Niagara Falls, September 8-11, 2019.

How Continuous Valuation Improves Taxpayer Acceptance
Conferences: National International Association of Assessing Officers Conference, Minneapolis, September 23-26, 2018.

Machine learning and econometrics
Seminars: Ortec Finance Research seminar, Amsterdam, December 7, 2018; The Bartlett School of Construction and Project Management, London, June 12, 2019.

Participation in academic networks & fellowships

Board member of the European Real Estate Society (ERES).
Weimer School Fellow (Homer Hoyt Institute, USA).