Workshop ANR Multirisk 2019

28 Avril – 1 Mai 2019 - Villa Finaly - Florence

Organisateurs : Serge Darolles (Université Paris-Dauphine), Christian Francq (CREST-ENSAE), Christophe Hurlin (Université d'Orléans), Gaëlle Le Fol (Université Paris-Dauphine), Jean-Michel Zakoian (CREST-ENSAE)

Dimanche 28 Avril

18.00 – Accueil des participants

20.00 – 22.00 – Cocktail dinatoire de bienvenu à la villa

Lundi 29 Avril

8.00 – 9.00 – Petit déjeuner

9.00 – 10.45 – Econometrics – Large Panels
Chair : Christophe Hurlin (Université d'Orléans)

Media Abnormal Tone, Returns, and Earnings Announcements
David Ardia (University of Neuchatel), Keven Bluteau (University of Neuchatel), Kris Boudt (Ghent University)

Forecasting Intradaily Liquidity in Large Panels
Christian Brownlees (Universitat Pompeu Fabra), Gaëlle Le Fol (Université Paris-Dauphine), Serge Darolles (Université Paris-Dauphine), Beatrice Sagna (Université Paris-Dauphine)

Estimation of large precision matrices using Autometrics, Lasso and Shrinkage methods, with an application to global minimum-variance portfolio
Sébastien Laurent (Aix Marseille University), Rosnel Sessinou (Aix-Marseille University)

10.45 – 11.15 – Pause-café

11.15 – 13.00 – Finance – Fluctuations & Spillovers
*Chair : Gilles de Truchis (*University of Paris Nanterre*)*

Structural estimation of time-varying spillovers: an application to sovereign debt markets
Lukas Boeckelmann (Paris School of Economics), Arthur Stalla (Université Paris-Dauphine)

The Shadow of a Doubt
Guillaume Chevillon (ESSEC Business School), Sophocles Mavroeidis (Oxford)

Cross-asset holdings and the resiliency of wholesale funding
Olessia Caillé (Université d'Orléans), Louis Raffestin (Université d'Orléans)

13.00 – 14.30 – Lunch à la Villa

14.30 – 16.15 – Econometrics – Time Series
Chair : Sessi Tokpavi (Université d'Orléans)

Path prediction of aggregated alpha-stable moving averages
Sébastien Fries (CREST-ENSAE)

Local Whittle Analysis of Stationary Unbalanced Fractional Cointegration Systems
Gilles de Truchis (University of Paris Nanterre), Florent Dubois (University of Paris Nanterre), Elena Dumitrescu (University of Paris Nanterre)

GARCH models with functional covariates
Ophélie Couperier (CREST-ENSAE), Christian Francq (CREST-ENSAE), Jean-Michel Zakoian (CREST-ENSAE)

16.15 – 16.55 – Pause-café

16.45 – 18.30 – Finance – General topics
Chair : Christelle Lecourt (Aix-Marseille University)

What If Dividends Were Tax- Exempt? Evidence from a Natural Experiment
Dušan Isakov (University of Fribourg), Christophe Pérignon (HEC Paris), Jean-Philippe Weisskopf (Ecole hôtelière de Lausanne)

Timing the Size Risk Premium
Serge Darolles (Université Paris-Dauphine), Gaëlle Le Fol (Université Paris-Dauphine), Gulten Mero (Université de Cergy-Pontoise)

Mental Accounts with Horizon and Asymmetry Preferences
Georges Hübner (HEC Liège), Thomas Lejeune (HEC Liège)

20.00 – 22.00 – Diner à la villa

Mardi 30 Avril

8.00 – 9.00 – Petit déjeuner

9.00 – 10.45 – Econometrics – Time varying variance and covariance
Chair : Christian Francq (CREST-ENSAE)

Dynamic Properties and Correlation Structure of Large Panel Crypto Currencies
Jeroen Rombouts (ESSEC Business School)

Testing for Volatility Spillover in High-dimensional Systems
Wassim Le lann (Université d'Orléans), Sessi Tokpavi (Université d'Orléans)

Orthogonal impulse response analysis in presence of time-varying covariance
Valentin Patilea (CREST-ENSAI), Hamdi Raissi (PUC Valparaiso)

10.45 – 11.15 – Pause-café

11.15 – 13.00 – Econometrics – Extreme risk
Chair : Jean-Michel Zakoian (CREST-ENSAE)

Backtesting Expected Shortfall via Multi-Quantile Regression
Ophélie Couperier (CREST), Jérémy Leymarie (Université d'Orléans)

Volatility Estimation and Jump Detection for Drift-diffusion Processes
Sébastien Laurent (Aix-Marseille University), Shuping Shi (Macquarie University)

Testing State Changes in Risk Measures
Sullivan Hué (Université d'Orléans)

13.00 – 14.30 – Lunch à la Villa

14.30 – 15.40 – Finance – Hedge Funds and Risk Premia
Chair : Gaëlle Le Fol (Université Paris-Dauphine)

The Earnings Announcement Day Puzzle in the Value Premium
Marie Lambert (HEC Liège), Nicolas Moreno (HEC Liège)

Trends everywhere? The case of hedge fund styles
Charles Chevalier (Université Paris-Dauphine), Serge Darolles (Université Paris-Dauphine)

16.00 – 20.00 – Première visite guidée de Florence

20.00 – 22.00 – Diner de la conférence à Florence

Mercredi 1 Mai

8.00 – 9.00 – Petit déjeuner

9.00 – 13.00 – Seconde visite guidée de Florence

13.00 – 15.00 – Lunch libre à Florence

15.00 – Fin du workshop

Abstracts

Media Abnormal Tone, Returns, and Earnings Announcements

David Ardia (University of Neuchatel), Keven Bluteau (University of Neuchatel), Kris Boudt (Ghent University)

Abstract: We introduce the Cumulative Abnormal Tone (CAT) event study methodology for tracking the dynamics of abnormal textual tone about an aspect of an entity around the time of events. To compute the textual tone, we recommend using the Generalized Word Power method, which uses regression techniques to estimate the polarity of the words belonging to a pre-defined lexicon. We apply the CAT event study and Generalized Word Power methodologies to media reports about firms' future performance published around the time of quarterly earnings announcements of non-financial S&P 500 firms over the period 2000-2016. We find that the CAT measure is more sensitive to negative earnings surprises than positive ones. Additionally, we report that the CAT measure predicts a stock price reversal after earnings announcements contrary to the traditional drift. We find that the CAT contribution of web publications is the main predictor of the reversal. This is consistent with the view that an overreaction is due to an increase in the attention of uninformed traders towards the earnings event and that uninformed traders' decision processes are influenced by the speculative and sensationalist nature of web publications.

Cross-asset holdings and the resiliency of wholesale funding

Olessia Caillé (Université d'Orléans), Louis Raffestin (Université d'Orléans)

Abstract: We provide a model in which financial institutions that share similar portfolios have an incentive to provide each other with favorable lending conditions, in order to avoid fire sales. This mechanism helps to explain the relatively mild reaction of interest rates to rising risk in short-term unsecured lending markets during the 2008-2009 crisis. Nevertheless, when similar institutions have privileged lending relationship, the financial network becomes clustered. This may increase systemic risk by fostering contagion.

Trends everywhere? The case of hedge fund styles

Charles Chevalier (Université Paris-Dauphine, PhD), Serge Darolles (Université Paris-Dauphine)

Abstract: This paper investigates empirically whether time-series momentum returns can explain the performance of hedge funds in the cross-section. Following the trend following literature, a volatility-adjusted time-series momentum signal is applied on a daily basis across a large set of futures, covering the major asset classes. We build a hierarchical set of trend factors: the full version TREND can be split in summable factors across two dimensions, the horizon of the signals and the traded asset class. We show that Managed Futures, Global Macro and Fund of Hedge Funds strategies can be partly explained by a TREND exposure, whereas Equity Market Neutral and Quantitative Directional are only exposed to long term trend factors. Moreover, a TREND exposure is a significant determinant of hedge funds returns at the aggregate level, as well as at the fund level. Finally, funds with high TREND beta outperform by 41 basis points of alpha the funds with low Trend beta. These results prove useful when managing the risk of a portfolio of hedge funds strategies, since assessment of the Trend exposure is easier. Another contribution of this study is related to the understanding of the CTA space, composed of pure trend funds as well as funds that do not exhibit any TREND exposure.

The Shadow of a Doubt

Guillaume Chevillon (ESSEC Business School), Sophocles Mavroeidis (Oxford)

Abstract: This paper proposes a new source of economic fluctuations in an environment where agents observe noisy signals about fundamentals. The model consists of rational agents who receive a noisy signal (doubt shock) about possible changes to fundamentals. A pure doubt shock occurs when the signal is erroneous. The doubt shock affects agents confidence in their beliefs about fundamentals, and can cause cyclical fluctuations akin to Pigou cycles. The impact of the doubt shock depends on how confident agents are about their prior beliefs, and its sign depends on whether they were pessimistic or

optimistic about fundamentals at the time of the shock. In the presence of doubts, impulse responses are nonlinear and depend on the path followed by the economy.

GARCH models with functional covariates
Ophélie Couperier (CREST-ENSAE), Christian Francq (CREST-ENSAE), Jean-Michel Zakoian (CREST-ENSAE)

Local Whittle Analysis of Stationary Unbalanced Fractional Cointegration Systems
Gilles de Truchis (University of Paris Nanterre), Florent Dubois (University of Paris Nanterre), Elena Dumitrescu (University of Paris Nanterre)
Abstract: In this paper, we propose a local Whittle estimator of stationary bivariate unbalanced fractional cointegration systems. Unbalanced cointegration refers to the situation where the observables have different integration orders, but their filtered versions have equal integration orders and are cointegrated in the usual sense. Based on the frequency domain representation of the system we develop a semiparametric approach to jointly estimate the unbalance parameter, the long run coefficient and the integration orders of regressors and cointegrating errors. The paper establishes the consistency and asymptotic normality of this estimator. Its finite-sample properties are then investigated through Monte Carlo experiments. We illustrate the empirical relevance of the developed estimator for financial data in an empirical application to the information flowing between the crude oil spot and CME-NYMEX markets.

Path prediction of aggregated alpha-stable moving averages
Sébastien Fries (CREST-ENSAE)
Abstract: For (X_t) a two-sided alpha-stable moving average, this paper studies the conditional distribution of future paths given a piece of observed trajectory when the process is far from its central values. Under this framework, vectors of the form $X_t = (X_{t-m}, ..., X_t, X_{t+1}, ..., X_{t+h})$, $m \geq 0$, $h \geq 1$, are multivariate alpha-stable and the dependence between the past and future components is encoded in their spectral measures. A new representation of stable random vectors on unit cylinders -or "unit spheres" relative to adequate semi-norms- is proposed in order to describe the tail behaviour of vectors X_t when only the first m+1 components are assumed to be observed and large in norm. Not all stable vectors admit such a representation and the process (X_t) will have to be «anticipative enough» for the vector X_t to admit one. The conditional distribution of future paths during extreme events can then be explicitly derived and has a natural interpretation in terms of pattern identification. The approach extends to processes resulting from the linear combination of stable moving averages, encompassing for instance the aggregation of anticipative AR(1) proposed by Gouriéroux and Zakoïan (2017) which generates trajectories featuring explosive bubbles of different growth rates. Other bubble-generating processes such as higher-order anticipative AR and fractionally integrated processes are also encompassed.

Mental Accounts with Horizon and Asymmetry Preferences
Georges Hübner (HEC Liège), Thomas Lejeune (HEC Liège)
Abstract: The paper extends the mental accounting framework in behavioral finance with investors' horizon and asymmetric consideration between extreme gains and losses. This intuitive Horizon-Asymmetry Mental Accounting framework (HAMA) has important implications for investors' risk preferences. Risk aversion and the optimal bond-to-stock ratio decline with the investment horizon. Investors who assign a high utility to upside potential tend to hold less diversified portfolios. In its general version, the model does not rely on any utility function nor return distribution. The model is flexible enough to encompass allocations from the mean-variance theory, the expected power utility, and a non-Gaussian utility framework.

Testing State Changes in Risk Measures
Sullivan Hué (Université d'Orléans)
Abstract: This paper proposes a new bootstrap-based test in order to detect state changes in risk measures. As risk measures are not observable ex-post, traditional tests based on loss-functions are not usable to detect breaks in their dynamics. Applicable to a wide class of risk measures, this test is

complementary to stress tests as it allows to detect the stress simulated in these latter ones. Monte-Carlo simulations show that the test has a good size and is powerful to detect several misspecifications even with a small number of observations. The test is applied to detect the global financial crisis of 2007-2008 using the Value-at-Risk and the Marginal Expected Shortfall. Results show that the test could have detected the crisis as early as July 2007 and that the test statistics was already very high few days before the failure of Lehman Brothers. Thus, the test could be used to monitor the state of the economy in order to apply the policy recommendations of the stress tests.

The Earnings Announcement Day Puzzle in the Value Premium
Marie Lambert (HEC Liège), Nicolas Moreno (HEC Liège)
Abstract: Firm-specific news content has multiple times greater impact on stock returns during earnings announcements (EA). Using Thomson Reuters News Analytics, we show that glamour stocks are almost twice as responsive to this news release than value stocks which only exhibit a weak initial response. The EA day news effect is not reversed over the rest of the quarter, suggesting that the impact of news is permanent and informative. Our findings are more consistent with an increase in idiosyncratic risk post-EA for value stocks due to slower information assimilation. If investors realize on EA that value stocks news convey a disappointing amount of information (in the sense that implications for future earnings and returns are less obvious than for growth stocks), then those investors will command a premium for bearing post-EA idiosyncratic risk. We further find that low reaction to EA-news is priced: stocks with the lowest sensitivity to EA-news earn a significant 19.80% annualized return and exhibit much greater idiosyncratic risk levels post-EA.

Volatility Estimation and Jump Detection for Drift-diffusion Processes
Sébastien Laurent (Aix-Marseille University), Shuping Shi (Macquarie University)
Abstract: The logarithmic prices of financial assets are conventionally assumed to follow a drift-diffusion process. While the drift term is typically ignored in the infill asymptotic theory and applications, the presence of temporary nonzero drifts is an undeniable fact. The finite sample theory for integrated variance estimators and extensive simulations provided in this paper reveal that the drift component has a nonnegligible impact on the estimation accuracy of volatility, which leads to a dramatic power loss for a class of jump identification procedures. We propose an alternative construction of volatility estimators and observe significant improvement in the estimation accuracy in the presence of nonnegligible drift. The analytical formulas of the finite sample bias of the realized variance, bipower variation, and their modified versions take simple and intuitive forms. The new jump tests, which are constructed from the modified volatility estimators, show satisfactory performance. As an illustration, we apply the new volatility estimators and jump tests, along with their original versions, to 21 years of 5-minute log returns of the NASDAQ stock price index.

Testing for Volatility Spillover in High-dimensional Systems
Wassim Le lann (Université d'Orléans), Sessi Tokpavi (Université d'Orléans)
Abstract: This paper proposes a semi-parametric inferential procedure to check for transmission in the distributions of the integrated volatility for two financial assets, using realized volatility measures. The main contribution of the paper is to consider a realistic setup allowing for a large system including many assets, with an increased risk of detecting spurious causalities arising from indirect contagion effects or the exposures to common shocks. Our testing procedure first controls for all potential confounding effects, via the use of the OLS post-Lasso estimator applied to a large dimensional heterogeneous autoregressive (HAR) model for the (logarithm) realized volatility measures, and thus relies on a multivariate Ljung-Box type test to check for causality in (volatility) distribution. We derive the asymptotic distribution of the test statistics under the null hypothesis which appears standard and free of parameter uncertainty. Monte Carlo simulations show that our test is well-sized in contrast to its analogue that ignores the confounding effects, and its powers are increasing in both the number of daily observations and the number of intradaily observations. An empirical application around measuring the systemic importance of banks in the U.S. financial system illustrates the usefulness of the test.

Backtesting Expected Shortfall via Multi-Quantile Regression
Ophélie Couperier (CREST), Jérémy Leymarie (Université d'Orléans)

Abstract: In this article, we propose a new approach to backtest Expected Shortfall (ES) exploiting the definition of ES as a function of Value-at-Risk (VaR). Our methodology examines jointly the validity of the VaR forecasts along the tail distribution of the risk model and encompasses the Basel Committee recommendation of verifying quantiles at risk levels 97.5%, and 99%. We introduce four easy-to-use backtests in which we regress the ex-post losses on the VaR forecasts in a multi-quantile regression model and test the resulting parameter estimates. Monte-Carlo simulations show that our tests are powerful to detect various model misspecifications. We apply our backtests on S&P500 returns over the period 2007-2012. Our tests clearly identify misleading ES forecasts in this period of financial turmoil. Empirical results also show that the detection abilities are higher when the evaluation procedure involves more than two quantiles, which should accordingly be taken into account in the current regulatory guidelines.

Timing the Size Risk Premium
Serge Darolles (Université Paris-Dauphine), Gaëlle Le Fol (Université Paris-Dauphine), Gulten Mero (Université de Cergy-Pontoise)
Abstract: In this paper we reconsider the size effect from the perspective of economic regime shifts based on both US and international markets over 1963-2017 period. We implement a bivariate Markov-regime switching approach to compute conditional risk-adjusted size spreads and provide strong evidence that the size effect is asymmetric over economic cycles; it is positive (negative) during expansion (recession) states. This is true for all the considered subperiods and across markets, which seems to invalidate the statistical fluke hypothesis stating that the size effect may by a chance result. Most importantly, our findings suggest that expansion and recession states do not occur simultaneously across international markets; as a result, the unconditional size spread tends to vanish when we move from region- (or country-) specific to aggregated markets especially over time periods characterized by more frequent recession dates. However, after controlling for regime shifts, the size spread of the global portfolio becomes positive during expansion periods, even if its order of magnitude is lower than that of the underlying specific markets. Finally, from a factor investing perspective, our framework provides new insights to investors in order to time more efficiently the size risk premia.

Orthogonal impulse response analysis in presence of time-varying covariance
Valentin Patilea (CREST-ENSAI), Hamdi Raissi (PUC Valparaiso)
Abstract: In time series econometrics it is common to investigate sub-samples of a full series in order to reveal changes in the dynamics. In this paper we suggest that if one wish to work with (rolling or fixed) sub-samples, it is advisable first to carry out a pointwise estimation, and next to resume it appropriately, according to the periods of interest. In this way one obtains an accurate picture of the non constant dynamics. To illustrate our point, we consider the analysis of the orthogonal impulse response functions (OIRF) in the case of VAR with constant autoregressive parameters but with time-varying covariance structure. The OIRF are commonly used in the econometrics literature and in many applications the conditional mean does not seem to change over time while the covariance structure is clearly time-varying. We introduce new OIRF based on kernel estimate of the covariance structure for which we obtain the root-T-asymptotic normality. We also introduce a variability index for the variance of the series in order to measure the departure from the standard homoscedasticity assumption. Our proposals are illustrated on simulated and real data.

What If Dividends Were Tax- Exempt? Evidence from a Natural Experiment
Dušan Isakov (University of Fribourg), Christophe Pérignon (HEC Paris), Jean-Philippe Weisskopf (Ecole hôtelière de Lausanne)
Abstract: We study the effect of dividend taxes on the payout and investment policy of listed firms and discuss their implications for agency problems. To do so, we exploit a unique setting in Switzerland where some, but not all, firms were suddenly able to pay tax-exempted dividends to their shareholders following the corporate tax reform of 2011. Using a difference-in-differences specification, we show that treated firms increased their payout by around 30% compared to control firms after the tax cut. Differently, treated firms did not concurrently or subsequently increase investment. We show that the tax-inelasticity of investment was due to a significant drop in retained earnings–as the rise in dividends was not compensated by an equally-sized reduction in share repurchases. Furthermore, treated firms did

not raise more equity than control firms. Lastly, we show that an unintended consequence of cutting dividend taxes is to mitigate the agency problems that arise between insiders and minority shareholders.

Dynamic Properties and Correlation Structure of Large Panel Crypto Currencies
Jeroen Rombouts (ESSEC Business School)
Abstract: The behaviour of a large portfolio of highly valued and most actively traded cryptocurrencies is studied. Unlike more traditional financial assets, the dynamic behaviour of cryptocurrencies returns is characterized by a particularly high level of volatility, by abnormally large variations, and is affected by extreme shocks to liquidity. We aim at investigating the dynamic properties of cryptocurrencies and particularly the correlation structure linking them to identify whether and to what extent there exist diversification opportunities in these markets.

Forecasting Intradaily Liquidity in Large Panels
Christian Brownlees (Universitat Pompeu Fabra), Gaëlle Le Fol (Université Paris-Dauphine), Serge Darolles (Université Paris-Dauphine), Beatrice Sagna (Université Paris-Dauphine)
Abstract: Large panels of intra-daily liquidity measures for stocks exhibit a high degree of cross-sectional dependence. At an overall perspective, these dependences can be the result of a common component, thus shared across stocks such as market index membership. At a more granular perspective, these dependences can be the consequence of idiosyncratic shocks affecting pairs of firms such as earnings announcements. We first document some stylized facts on the time series and cross-sectional dependence properties of the constituents of the CAC40 index. This allows us to detect both the persistence of a common pattern and the presence of pair-wise dependence. Then by proposing a multivariate methodology that exploits these two stylized facts, we are able to predict intra-daily liquidity of our constituents. Indeed, we perform a two-step estimation procedure based on Principal Components Analysis (Pca) and Least Absolute Shrinkage and Selection Operator (Lasso) techniques to recover these regularities from intra-daily level data. Our results show that the combination of Pca and Lasso leads to higher forecasts accuracy of intra-daily liquidity. In particular, the out-of-sample predictions confirm that our methodology significantly outperforms over standard multivariate forecasting models. We apply our framework to multiple intra-daily trading intervals to ensure consistency of our results.

Structural estimation of time-varying spillovers: an application to sovereign debt markets
Lukas Boeckelmann (Paris School of Economics), Arthur Stalla (Université Paris-Dauphine)
Abstract: We propose a structural version of the popular Diebold-Yilmaz (DY) spillover framework based on a single comprehensive empirical approach. Key to our approach is a SVAR-GARCH model that is identified by heteroskedasticity and allows for the construction of time-varying and up-to-date forecast error variance decompositions. Building on these advances, we analyze the degree, time variation, direction and determinants of financial spillovers on international sovereign debt markets. We find that, in line with previous findings, overall contagion on European sovereign markets decreased in 2010-2012 due to financial fragmentation. However, in contrast to the existing literature, our estimates suggest that Greece was less of a driver for other Eurozone countries during the Euro Area debt crisis. Moreover, we show that total connectedness is more reactive under our econometric approach compared to other methods used in the literature, as it does not rely on a rolling-window estimation.

Estimation of large precision matrices using Autometrics, Lasso and Shrinkage methods, with an application to global minimum-variance portfolio
Sébastien Laurent (Aix Marseille University), Rosnel Sessinou (Aix-Marseille University)

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Informations pratiques

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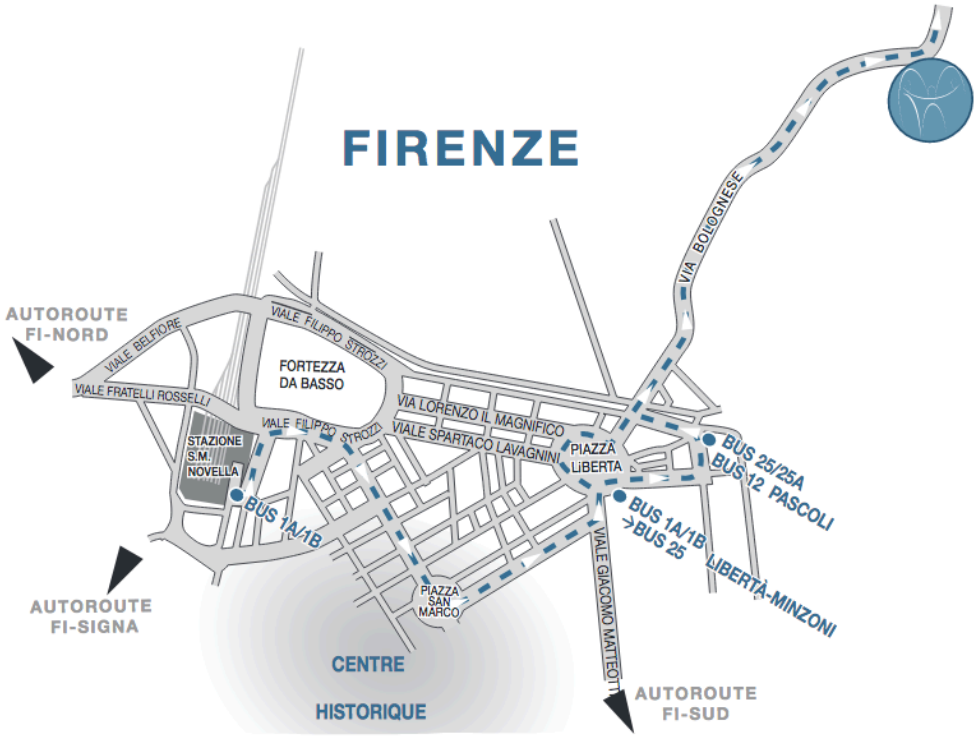

Aéroport : 7 km de l'aéroport de Florence – 20 euros en taxi. Sinon prendre l'autobus n° 62 jusqu'à la gare centrale de Florence « Santa Maria Novella » puis l'autobus n° 1/1A jusqu'à l'arrêt arrêt « Libertà-Minzoni », et du même arrêt, prendre l'autobus 25/25A jusqu'à l'arrêt « Villa Finaly »

Gare : Prendre l'autobus n° 1/1A jusqu'à l'arrêt « Libertà-Minzoni », et du même arrêt, prendre l'autobus 25/25A jusqu'à l'arrêt « Villa Finaly »