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| **Table S1.**Timber production and direct operational costs of the NovotnýLVS5 forwarder | | | | | | | | | | | | | |
| Item | Year | | | | | | | | | Total | Monthly | Annual | Share |
| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| (EUR) | | | | | | | | | | | | (%) |
| Amortization | 12 618 | 15 864 | 16 592 | 17 064 | 16 691 | 4 039 | 0 | 0 | 0 | 82 867 | 846 | 10 147 | 12.5 |
| Services | 5 321 | 6 341 | 6 696 | 5 717 | 7 363 | 5 88 | 6 463 | 2 626 | 245 | 46 651 | 476 | 5 712 | 7 |
| Materials | 10 04 | 8 113 | 12 262 | 14 921 | 14 61 | 12 848 | 13 168 | 9 886 | 3 38 | 99 23 | 1 013 | 12 151 | 14.9 |
| Personnel | 34 339 | 36 701 | 56 486 | 55 501 | 58 775 | 65 712 | 56 687 | 57 526 | 14 871 | 436 598 | 4 455 | 53 461 | 65.6 |
| Total | 62 319 | 67 019 | 92 035 | 93 203 | 97 439 | 88 479 | 76 318 | 70 038 | 18 496 | 665 346 | 6 789 | 81 471 | 100 |
| Forwarded volume(m3) | 9 727 | 14 301 | 14 048 | 13 85 | 12 283 | 14 14 | 15 424 | 15 909 | 5 135 | 114 817 | 1 172 | 14 059 | X |
| Operational time (MH) | 2 758 | 2 583 | 3 114 | 3 185 | 2 856 | 2 751 | 2 752 | 2 498 | 883 | 23 38 | 239 | 2 863 | X |
| Delays (h) | 520 | 865 | 372 | 445 | 720 | 820 | 810 | 850 | 502 | 5 904 | 60 | 723 | X |
| Machine utilization (%) | 84.1 | 74.9 | 89.3 | 87.7 | 79.9 | 77 | 77.3 | 74.6 | 63.8 | 79.8 | X | X | X |
| Costs (EUR/m3) | 6.41 | 4.69 | 6.55 | 6.73 | 7.93 | 6.26 | 4.95 | 4.4 | 3.6 | 5.71\* | X | X | X |
| Costs (EUR/MH) | 22.6 | 25.95 | 29.56 | 29.26 | 34.12 | 32.16 | 27.73 | 28-Apr | 20.95 | 28.36\* | X | X | X |
| Productivity (m3/MH) | 3.5 | 5.5 | 4.5 | 4.3 | 4.3 | 5.1 | 5.6 | 6.4 | 5.8 | 5.1\* | X | X | X |
| Forwarding distance (m) | 369 | 276 | 404 | 316 | 392 | 445 | 435 | 411 | 453 | 389 | X | X | X |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table S2.** Timber production and direct operational costs of the John Deere 1010 forwarder | | | | | | | | | | | | | | | | | | | |
| Item | Year | | | | | | | | | | | Total | | Monthly | | Annual | | Share | |
| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |  | |  | |  | |  | |
| (EUR) | | | | | | | | | | | | | | | | | (%) | |
| Amortization | 24 934 | 25 455 | 28 333 | 26 715 | 27 941 | 28 736 | 7 552 | 0 | 0 | 0 | 169 665 | | 1 529 | | 16 937 | | 15.7 | |
| Services | 29 746 | 38 99 | 14 584 | 27 848 | 15 291 | 35 827 | 41 4 | 9 362 | 24 29 | 1 823 | 239 161 | | 2 155 | | 23 916 | | 22.1 | |
| Materials | 47 674 | 47 069 | 37 228 | 22 178 | 24 562 | 29 121 | 26 684 | 28 751 | 25 258 | 4 924 | 293 449 | | 2 644 | | 29 345 | | 27.1 | |
| Personnel | 43 96 | 46 614 | 46 599 | 37 244 | 38 959 | 36 081 | 39 62 | 45 225 | 35 891 | 9 544 | 379 736 | | 3 421 | | 37 974 | | 35.1 | |
| Total | 146 313 | 158 127 | 126 744 | 113 986 | 106 753 | 129 765 | 115 256 | 83 338 | 85 439 | 16 291 | 1 082 011 | | 9 748 | | 108 201 | | 100 | |
| Forwarded volume(m3) | 34 604 | 28 945 | 25 845 | 25 855 | 22 107 | 21 286 | 22 084 | 23 483 | 20 449 | 4 045 | 228 703 | | 2 06 | | 24 725 | | x | |
| Operational time (MH) | 3 697 | 3 896 | 3 088 | 2 512 | 2 752 | 2 468 | 2 69 | 2 615 | 2 417 | 490 | 26 625 | | 240 | | 3 26 | | x | |
| Delays (h) | 2 141 | 1 599 | 987 | 1 365 | 828 | 1 484 | 1 195 | 1 219 | 1 176 | 94 | 12 088 | | 109 | | 1 48 | | x | |
| Machine utilization (%) | 63.3 | 70.9 | 75.8 | 64.8 | 76.9 | 62.4 | 69.2 | 68.2 | 67.3 | 83.9 | 68.8 | | x | | x | | x | |
| Costs (EUR/m3) | 4.23 | 5.46 | 4.9 | 4.41 | 4.83 | 6.1 | 5.22 | 3.55 | 4.18 | 4.03 | 4.73\* | | x | | x | | x | |
| Costs (EUR/MH) | 39.58 | 40.59 | 41.04 | 45.38 | 38.79 | 52.58 | 42.85 | 31.87 | 35.35 | 33.25 | 40.69\* | |  | |  | |  | |
| Productivity (m3/MH) | 9.4 | 7.4 | 8.4 | 10.3 | 8 | 8.6 | 8.2 | 9 | 8.8 | 8.3 | 8.6\* | | x | | x | | x | |
| Forwarding distance (m) | 272 | 267 | 460 | 261 | 336 | 335 | 348 | 296 | 318 | 442 | 321 | | x | | x | | x | |

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| **Table S3.** Timber production and direct operational costs of the John Deere 1110E forwarder | | | | | | | |
| Item | Year | | | Total | Monthly | Annual | Share |
| 2017 | 2018 | 2019 |
| (EUR) | | | | | | (%) |
| Amortization | 60 772 | 68.08 | 68 001 | 196 853 | 5 624 | 67 492 | 42.2 |
| Services | 3 019 | 6 029 | 6 242 | 15 29 | 437 | 5 242 | 3.3 |
| Materials | 27 865 | 29 819 | 33 37 | 91 054 | 2 602 | 31 219 | 19.5 |
| Personnel | 48 556 | 52 146 | 62 424 | 163 127 | 4 661 | 55 929 | 35 |
| Total | 140 212 | 156 075 | 170 037 | 466 324 | 13 324 | 159 882 | 100 |
| Forwarded volume(m3) | 22 544 | 21 613 | 24 752 | 68 909 | 1 969 | 23 626 | X |
| Operational time (MH) | 2 126 | 2.1 | 2 015 | 6 241 | 178 | 2 14 | X |
| Delays (h) | 1 188 | 1 375 | 1 452 | 4 015 | 115 | 1 377 | X |
| Machine utilization (%) | 64.2 | 60.4 | 58.1 | 60.9 | X | X | X |
| Costs (EUR/m3) | 6.22 | 7.22 | 6.87 | 6.77 | X | X | X |
| Costs (EUR/MH) | 65.95 | 74.32 | 84.39 | 74.72 | X | X | X |
| Productivity (m3/MH) | 10.6 | 10.3 | 12.3 | 11 | X | X | X |
| Forwarding distance (m) | 491 | 560 | 529 | 526 | X | X | X |